# Gas Journal

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# Editorial Notes

## Remedying the Decline

In his Address to the National Gas Council a year ago Sir David Milne-Watson said it was essential that methods of charge should be devised and put into operation which will encourage large consumptions and increase the consumption per consumer. Since then the consumption per consumer has shown a further decline—and this in spite of the Gas Undertakings Act 1934. Many bewailed that the Act does not empower gas undertakings to impose a minimum charge; on the other hand, there were those who considered, and still consider, that a minimum charge would be by no means an unmixed blessing if applied to an Industry established at the beginning of the last century and which is dependent on the goodwill of over 10,000,000 consumers. " Service to all " is a motto which has stood the Industry in good stead, and though it is strictly unsound that the good consumer should support the unremunerative, a minimum charge might deprive many of a service upon which, through long years, they have come to rely for their comfort.

But there are other ways of increasing the consumption per consumer and reducing the percentage of unremunerative consumers, and one of the most important is undoubtedly the adoption of attractive tariffs. On several occasions since the 1934 Bill became law we have urged gas executives throughout the land to press on with taking advantage, with all possible speed, of such freedom which the new Act does afford. Any gas undertaking in the country can now make " special contracts " to supply gas on such terms as they think fit, without fear of committing any breach of maximum price provisions and without jeopardizing their dividends if they are sliding scale or basic price companies. This fact, said Sir David twelve months ago, " removes the last excuse or reason for adhering to the flat rate method of charge, and it will, I think, be the duty of all of us to study ways and means whereby we can not only obtain new consumers, but increase the consumption per existing consumer, which is one of the most important things. We must not be buoyed up by an increase of business generally, but we must look to what we are getting per consumer. That is the tell-tale figure."

## Need for Action

In his Address last week Sir David said that awakening interest in new loads has compelled all carefully to review the vital question of methods of charge. Frankly the Industry generally has not done what it could during the past twelve months. We had fondly imagined that individual undertakings, realizing the likelihood or even the possibility of a new freedom, would have put in quite an amount of advance study on the subject of attractive tariffs. We may be told that it is not easy to abandon the seeming security of the flat rate for the uncertainty of a more attractive form of tariff. Of course, it is not easy; there are very many difficulties. We maintain, however, that the flat rate is by no means a security, and that if it is adhered to business will be lost and the consumption per consumer will dwindle. We discussed this question in these columns only a fortnight ago in connection with the Paper by Mr. Ridley to the North of England Gas Managers' Association. Mr. Ridley explained how serious was the decline in consumption per consumer in Newcastle between the years 1928 and 1933. Since tariffs alternative to the flat rate have been operated by the Newcastle-upon-Tyne and Gateshead Gas Company they have been successful in stopping serious loss. In Mr. Ridley's own words: " I have no hesitation in saying that properly designed tariffs giving a general bonus in respect of gas taken in excess of standard quantities are undoubtedly an aid to increasing the sales of gas per consumer, and if the Gas Industry is to show marked progress in the future it will be through the medium of tariffs." We gather from the discussion on Mr. Ridley's Paper published in the " Journal " last week, that undertakings were " waiting for a lead." Well, a few enterprising undertakings have provided a lead during the past year. It is up to the others to go ahead. We appreciate that it is quite impossible to lay down any hard and fast rule as to the appropriate method to be adopted by any particular undertaking. The facts and circumstances of each case can alone determine the method which is most suitable in this connection, but Sir David, in his Address, reminded members that Mr. Fottrell, of the N.G.C., is

happy to help with advice, and he called attention to the fact that a Memorandum on the subject of gas charges has been prepared and issued by the National Gas Council with the approval of the other National Bodies. Surely there will be a real move to adopt attractive tariffs now. Or next year, when Sir David comes to review progress as President of the National Gas Council, will he have once again to urge gas undertakings to study this all-important question of gas pricing?

## Beating the Thermometer

THERE is another aspect of attractive tariffs to which Sir David referred and which we should like specially to emphasize: "To the end of November everything was promising, and we hoped to disclose a substantial increase in gas sales during 1934. Unfortunately, however, December was positively hot—unprecedentedly hot—and the advance we had gained was practically wiped out." These or similar words fell from the lips of chairman after chairman in addressing shareholders of gas companies at the annual general meetings. The point is that as it stands to-day, the Gas Industry is extremely sensitive to the weather, and that the remedy for this sensitiveness lies in increasing sales of gas to commerce and industry. Such increase can be attained by attractive tariffs and the development of new uses for gas. One of the best moves made by the National Bodies of the Industry, through the Joint Co-ordinating Committee, was the establishment two years ago of Industrial Development Centres in selected and appropriate areas of the country. We have pointed out time and again that the public regards the Industry as a whole, and the mistakes or inefficiency of one undertaking react on the Industry in general. This applies to the industrial sphere as well as to the domestic side of gas utilization, and that is why we so greatly regret that there is not a 100% membership of the Industrial Development Centres. At present 351 undertakings are members, and their output represents 77% of the gas made in Great Britain. But the latest Board of Trade Return relates to 727 statutory gas undertakings, so that as far as members go less than half the undertakings are taking advantage of the development scheme—and this in spite of the fact that the scheme has proved an unqualified success in extending the use of gas in industry.

Let us take the case of a large firm having branch works throughout the country. If the gas equipment at any branch is allowed to fall into an inefficient state it is obviously a target for our competitors, and if the load is lost a reaction will be felt at every other branch, to the disadvantage of all the other gas undertakings concerned. A few months ago Mr. Dieterichs, of the Gas Light and Coke Company, in a Paper to the Southern Association of Gas Engineers and Managers, told his audience of a London firm which recently installed expensive electric furnaces for the sole reason that its parent company in the United States had been persuaded to do the same. This is an extreme example, but it adds weight to our contention that those undertakings outside the Development Scheme are doing both themselves and the Gas Industry in general incalculable harm. We hope that Sir David's appeal for universal support of the Centres will not be in vain.

## Rate-Aided Electricity

TURNING to another angle of the 1934 Act, Sir David referred to the clause to prevent local authorities, in cases where the gas supply is in the hands of a company, from inserting in tenancy agreements restrictions as to the use of gas for lighting, heating, or cooking. In spite of this clause there are local authorities endeavouring to hamper gas companies while taking rates from them to bolster up the authorities' electricity undertakings. In this connection it is only a few weeks ago—in the "JOURNAL" for April 3—that we commented on the decision of the Committee of the House of Commons which dealt with a Bill promoted by the Corporation of South Shields. The Bill, in its original form, contained the objectionable feature of which Sir David spoke, and if it had been sanctioned by Parliament the Corporation would have been entitled to build up a reserve fund in respect of the electricity department out of the general fund of the rates. The South Shields Gas Company, which is among the largest ratepayers in the area, naturally objected to this proposal, and opposed the Bill. As a result the Committee upheld the principle that trading departments should be self-supporting. As we remarked on April 3, the South Shields Gas Company did a great service to the Industry by contesting the matter, and in view of its success it is unlikely that other Local Authority Bills in the original South Shields form will be promoted.

Sir David also commented on the Electricity Supply Act, 1935. He said: "The recognition that the finances of the grid are far from sound, and that the chances of it being able to pay out of revenue the interest on the capital raised are remote, has induced the Government to pass the Bill. We must be vigilant to ensure that the inability to pay interest on its capital is not made an excuse for further subsidies." We shall have little chance of ensuring any such thing unless the Gas Industry presents a united front and takes steps to make all connected with it in any capacity, from highest to humblest in its ranks, and all its consumers, enthusiastic gas salesmen. "Gas Conscious Throughout" was the title of a recent comment in our columns, when we urged the importance of creating a vast army capable of swaying opinion in high quarters. It is only as a national cry that the voice of the Gas Industry will be heard on questions such as this.

## Internal Organization

To one other passage in Sir David's speech we would make reference. In the section dealing with organization, he remarked: "Complex questions—and they constantly tend to become more numerous—demand special detailed study; sub-committees have to be appointed to deal with them and again there is a call for volunteers. They respond with splendid loyalty, but the burden upon men, all of whom hold positions of the utmost responsibility, tends to become intolerable. . . . You cannot, of course, run the affairs of a great industry without hard work and loyal service. That we have always had in the past and I know that we shall have it in the future, but by re-organization we must do our utmost to mitigate the strain of services which are given so ungrudgingly and so well."

Now it is impossible to be constantly moving as we are in all the various circles of the Industry without being aware of the mutterings here and there of what is commonly known as "old-gangism," in the national management of our Industry's policy. Our invariable comment is that, if those who utter these complaints, or even hint at them, are willing to volunteer, the remedy lies in their own hands for, as Sir David points out, the call for voluntary services is well-nigh incessant. And so, unless and until re-organization is able to ease the strain, there must be a ready welcome for those who can spare the time, but a welcome with one big "if." They must, in short, possess certain qualifications beyond mere dissatisfaction with the *status quo*.

## The S.B.G.I.

An outstanding impression of the past week is that the unity of purpose to which the Industry aspired in the formation of the British Gas Federation was definitely advanced at the important gatherings of the N.G.C. and the S.B.G.I. It may be that the Federation, at its inauguration last year, was something of a pious hope in many people's minds, and certain words spoken at the S.B.G.I. meeting last week indicated quite clearly that it had been regarded at first with scepticism, if not definite mistrust, by certain other people. But we consider that such misgivings can now well be forgotten when Sir David Milne-Watson, speaking at the N.G.C. meeting, was able to say: " In the past the Society of British Gas Industries, though working in close harmony with us, has not been formally associated with the work of our national associations. That defect has been cured to the satisfaction of all, for, by the creation of the British Gas Federation, we now have a body which when occasion arises can speak and act for the whole Industry."

These words, be it noted, were spoken at a time when the Federation has passed well beyond the inauguration stage, when it has met and adopted a Constitution and Rules, when it has, in fact, already functioned in a matter which very vitally affects the interests of the members of the S.B.G.I. And on the day following they received equally cordial assurances from the President of the Institution that they are not only accepted with full equality of status into the Federation, but that the other members of the Federation unhesitatingly recognize the useful functions which the S.B.G.I. can fulfil, and quite definitely expect them to be fulfilled. It is true that Mr. Valon Bennett was enjoying the hospitality of the Society at the time, but Institution Presidents, like Prime Ministers, do not plunge heedlessly into their dinner speeches. In fact, they often choose such occasions for pronouncements of policy, and there can be no doubting Mr. Bennett's sincerity when he welcomed the Society as a new and valuable participator in the main counsels of the Gas Industry.

When, at the Annual General Meeting of the Society, the retiring Chairman, Mr. Douglas W. Turner, made such a strong plea in the Council's Report for unity and co-operation among the members—and others who would have all to gain and nothing to lose by becoming members—he could hardly have anticipated such backing from such influential quarters later on the very same day.

Altogether, it must have been a great day for the Society, and it was impossible not to sense an increase already in prestige engendered in part, we believe, by the realization of the Industry that the Society can and will render greater service than it has ever before had the opportunity to do, and in part by the realization of the members themselves that they have a new and highly important responsibility. We can hardly add to the strength of the appeal which was made in the Council's Report for the genuine and whole-hearted support of the members, but we would repeat the point which we have made before—that it is in the very best interests of the whole Industry that there should be a strong, representative, and united S.B.G.I.

## On a National Basis

The fuel problem as a whole was taken by Sir John Cadman as the subject of his Presidential Address to the S.B.G.I., though he entitled it " The Future of Gas." This future, he says, lies in a wide expansion of its use as a heating agent for both industrial and domestic purposes; but this expansion will not be brought about unless there is greater co-operation between the various bodies comprising the Industry. Also, he thinks it desirable in this competitive age to embark upon national planning of the fuel industries, and that " the Gas Industry might be greatly aided if some well-informed people would turn their minds to the compilation of a national plan for the Gas Industry in Great Britain." He repeated this idea in his speech at the Society's Annual Dinner. If only, he said, the Industry would unite in deciding upon what it wants, and co-operate to reach its aim, it is bound to succeed.

As far as internal co-operation is concerned, the formation of the British Gas Federation has already gone far to make this properly effective. There can be no doubt that the changes taking place within the Industry are greater in extent and importance than any moves made in the history of the Industry. Dr. E. W. Smith emphasized this at the Society's meeting; and in regard to a national plan, Dr. Smith said that the germs of such a plan are already in existence. Actually a Committee is considering a possible plan for the development of the Industry on national lines, and we are more than interested in what it has in mind. Perhaps it is envisaging the appointment of Gas Commissioners on lines similar to the electricity industry's organization, or it may even be turning its thoughts to the possibility of a Ministry of Fuel, responsible for all types of energy used in the British Isles. Whatever the outcome of the Committee's work, however, it is obvious that it must have as a basis a united voice within the Industry to express opinion and recommendations on high policy. This, we suggest, should be the function of the British Gas Federation, and when it speaks for the Industry it must not be regarded as usurping the rights or controlling the activities of any of the constituent bodies.

There is unquestionably great need for a strong and a united voice, for at present the sympathy extended to the claims and propositions of the Gas Industry is too scant. It may be that the present administrative machinery controlling the Gas Industry leaves something to be desired, but the fact remains that the Gas Industry, in comparison with industries comparable in size and in public importance, suffers badly when it desires to put its case before Parliament and Government. The appointment of Gas Commissioners would cause much heart burning, but it might mean more home fires and more industrial furnaces burning on gas. At any rate a good deal of hard thinking is being forced upon the Gas Industry through pressure of competition; and the harder it thinks and the sooner it acts, the better for its future strength and prosperity.

## Financing Hire Purchase

An advertisement in last week's " Journal " constituted the first announcement to the world of what was described by its sponsors as " a new service for gas undertakings." The sponsors were Gas Consolidation, Ltd., which, as is well-known, is one of the holding companies formed in recent times by Dawnay Day & Co., Ltd., and has an issued capital of half-a-million pounds. In offering for public subscription, on the first of this month, 250,000 4% redeemable cumulative preference shares of £1 each at par and 50,000 ordinary shares at 22s. each, the Company announced their investments as a substantial holding in the Severn Valley Gas Corporation and controlling interests in three contiguous supply companies—Cannock District, Lichfield, and Tamworth.

The Gas Industry has long since become accustomed by frequent announcements of new offers and acceptances to what are now accepted as the normal operations

of the various holding companies; but it is not too much to say that the advertisement in last week's issue, and a statement in the national Press conveying the same information, will have aroused the liveliest interest in all circles of our Industry.

Until further details of the scheme are generally known, it is difficult to comment upon it, though our review of the week can hardly pass over without mention of what may prove to be a departure of considerable moment. The financing of hire-purchase operations is nowadays a generally recognized feature of our commercial and everyday life, but so far as we know it has hitherto played no great part in the Gas Industry. That an attempt is to be made to extend it is not surprising, and we suggest that the prime interest in the proposed extension is that it should have been initiated by one of the holding companies which have hitherto mainly confined their activities to the purchase of control of gas supply companies.

The Industry will, therefore, look forward to hearing the result of the enquiries which Gas Consolidation, Ltd., have invited from "managers and officials of gas companies." Evidence of interest was already manifest in several questions we heard debated among those from all sides of the Industry who gathered at last week's meetings. For example, it is naturally a matter of great concern to the various sections of the Industry as to who will pay for the service to be given—whether the gas consumer, the gas undertaking, or the appliance maker. Then, again, we have heard it asked whether this holding company, or any other which might later follow suit, intends to confine its new operations to its own group, or to extend them outside. We imagine it is fairly clear from the announcements already made that the latter is the case, but we repeat the question as one which is being discussed as a matter of major policy affecting the Industry, with all that a central buying organization implies. It is generally granted, too, that there are quite a number of gas undertakings which do not offer to the public anything like the range of appliances which is obviously desirable. In cases where this is due to lack of gas-mindedness—and it is suspected that this is often the case rather than lack of finance—will the new service be able to effect a change of heart?

These points we have mentioned are among those which are being discussed since last week's announcement by Gas Consolidation, Ltd. We shall look forward with great interest to hearing of any further developments in the scheme, with all its novelty for our Industry.

## Personal

In succession to Mr. W. Wilson, whose appointment as a Director of the Caledonian Gas Corporation was announced recently in these columns, Mr. HAROLD WYNNE, Assistant Manager, has been promoted to Engineer and Manager of the Burton-on-Trent Corporation Gas Department. Mr. CHARLES HAYWOOD UNDERHILL, at present Distribution Manager, has been appointed Distribution Manager and Assistant Engineer. The appointments take effect from June 1.

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Mr. J. H. RICHMOND, of Thermal Appliances, Ltd., 715, Fulham Road, S.W. 6, manufacturers of gas water heater appliances, has been appointed Sales Engineer for their Lancashire and Cheshire area. Mr. Richmond, who has been with the firm for about twelve months, has been in the Gas Industry for many years.

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The vacancy at Abergavenny caused by the resignation of Mr. A. T. KYLE, Engineer and Manager of the Gas Department, has been filled by the appointment of Mr. A. D. HOWELLS, Assistant Engineer to the Neath Gas Department and last year's President of the Wales and Monmouthshire Junior Gas Association.

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Mr. DOUGLAS L. COPP, Assistant Engineer and Manager to the Exeter Gaslight and Coke Company, has been appointed Engineer, Manager, and Secretary of the Haverfordwest Corporation Gas Department in succession to Mr. K. E. Tiddy.

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His many friends in the Industry will be glad to learn that Mr. A. B. WALKER, lately of Wallsend-on-Tyne, who recently underwent a serious operation in an Edinburgh nursing home, is now making good progress towards recovery.

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On attainment of the fiftieth anniversary of his election to membership of the Institution of Civil Engineers, Mr. T. N. RITSON, Chairman and Managing Director of the Chichester Gas Company and Deputy-Chairman of the Bognor Gas and Electricity Company, was the recipient of a congratulatory letter from the President of that Institution, who paid tribute to his service to the engineering profession during a long career.

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Out of 32 applicants Mr. ARTHUR BLACKWELL, of the Mansfield Corporation Gas-Works, has been appointed Secretary to the Berwick and Tweedmouth Gaslight Company, Ltd., in succession to Mr. J. M. Edney, who is retiring. Mr. Blackwell is a native of Mansfield and has been with the Mansfield Corporation for 18 years.

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After twenty-three years' service with the Department, Mr. CHARLES LOVERIDGE is retiring from his position of Engineer, Manager, and Secretary of the Chesterton Gas-Works of the Borough of Newcastle-under-Lyme.

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Mr. G. FRITTON, B.Sc., has been appointed as an Assistant to the Stroud Gas Company. He previously held a similar position with the Dewsbury Corporation Gas Department under Mr. H. L. Bateman, Engineer and Manager.

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A Director of the Newport (Mon.) Gas Company, Mr. R. WILSON BARTLETT, J.P., F.S.A.A., has been elected President of the Society of Incorporated Accountants and Auditors in succession to Sir James Martin, J.P. Mr. Bartlett is senior Partner of the firm of Walter Hunter, Bartlett, Thomas, & Co., Incorporated Accountants, of Newport, Cardiff, and London.

## Obituary

### Mr. A. W. Brookes.

It is with regret that we have to announce the death on Friday last of Mr. ALFRED WILLIAM BROOKES, who had been connected with the British Gas Light Company for fifty-seven years. It is exactly seven years ago—on May 22, 1928—that Mr. Brookes, on completing fifty years' service with the Company, was entertained at luncheon at the Savoy Hotel by the Chairman and Directors, who made him a presentation to commemorate the event.

Mr. Henry Woodall, Chairman of the British Gas Light Company, writes:

"The death of my old friend, Mr. A. W. Brookes, will be deeply regretted by his many friends but by none so much as those connected with the British Gas Light Company, which he served so well and faithfully for fifty-seven years. He joined the Company in 1878 and became the Secretary and Chief Official in 1908. On his retirement in 1929 he was appointed a Director.

"He was a man of great ability and of the highest character, and the success of the British Gas Light Company is to no small extent due to his constant care of its interests.

"His high standard in all his dealings was the standard he expected and obtained from the servants of the Company and they respected and honoured him.

"We in the British Gas Light Company deeply deplore our loss, but his example and his high ideals will long remain to us a cherished tradition."

# News in Brief

**The Annual Meeting** of the Waverley Association of Gas Managers will be held in Edinburgh on June 28.

**Twelve Days' Holiday with Pay** will be granted to all employees of the Stalybridge Corporation Gas Department this year.

**Three Tableaux** were arranged for a grand procession by the Stockton-on-Tees Gas Department in connection with the Jubilee celebrations.

**The Offer** of Messrs. Henry Balfour & Co., Ltd., Leven, Fife, to install a water-cooled condenser at their Gas-Works has been accepted by the Dunoon Town Council.

**The Tender** of Messrs. Ashmore, Benson, Pease, & Co., Ltd., for the re-sheeting of the crown of their No. 1 holder has been accepted by the Stockton Town Council.

**In the Carnival** held recently at Horley as part of the Jubilee celebrations, the Horley District Gas Company were successful in gaining two prizes with their entries.

**An Increase of 7·6%**, or 13,241,000 cu.ft., in the sales of gas for the year ended March 31, 1935, is reported by the Port Talbot Gas Department. During the last three years the Department's gas sales have increased by 23%.

**Conference on Smoke and Aviation.**—A Special Public Conference on this subject is to be held under the auspices of the National Smoke Abatement Society on Thursday, May 30, in the Caxton Hall, Westminster, commencing at 2.15 p.m.

**The Enlargement** of the Walsall Gas Department's showrooms in Upper Bridge Street on the recommendation of the Gas Committee has been approved by the Town Council. The extensions include a large room for demonstration purposes.

**Gas Services and Housing Schemes.**—Dalkeith Gas Light Company has accepted a proposal by the Town Council to contribute £148, representing £1 per house, towards the cost of gas services to be provided for in the Woodburn housing scheme.

**Southern Association of Gas Engineers and Managers.**—The Annual Summer Meeting of the Association will be held at Guildford on Tuesday, June 25, 1935, under the Presidency of Mr. E. L. Nicholas, Engineer and Manager of the Guildford Gas Light and Coke Company.

**The 30th Half-Yearly Meeting** of the Auxiliary Section of the North of England Gas Managers' Association will be held on Friday, June 21, at the Gas Office, Grainger Street, Newcastle-upon-Tyne, at 2.30 p.m. An Address will be given by the Chairman, Mr. S. A. Wikner, F.I.C.

**The Next Meeting** of the Manchester District Association of Gas Engineers will be held on Friday, July 5, 1935, when a visit will be paid to the President's Works at Cleckheaton. This will be followed by a visit to Messrs. Samuel Law & Sons, Ltd., Moorland Mills, Cleckheaton.

**A Further Six Lamps and Columns** of a similar type to that described in last week's "JOURNAL"—page 368—are to be erected by the Stratford-on-Avon Gas Department in Bridge Street at an estimated cost of £120. Bridge Street is known all over the world as "the Street of the Flags of All Nations."

**Applications Have Been Received** by the Croydon Gas Company for £499,545 of stock in connection with the recent offer to consumers and employees of £75,000 5% maximum dividend stock at £114%. The allotment letters have been issued, and special consideration has been given, as indicated in the prospectus, to small applications.

**Gasholder Repairs.**—Messrs. Clayton, Son, & Co., Ltd., of Leeds, who have specialized since 1928 in electric welding of gasholders, tanks, and other plant, have acquired the sole right of carrying out gasholder repairs, while working, by electric welding under the Wegner process. This process was referred to in the "JOURNAL" for June 6 and June 13, 1934.

**An Outbreak of Fire** in the engine room at the Comber (Co. Down) Gas-Works on May 14 caused some anxiety. The fire extinguisher was of no avail in subduing the flames and the Engineer, Manager, and Secretary, Mr. W. S. Moore, telephoned for the Belfast and Newtownards Fire Brigades. These made a speedy response. From the start the firemen were successful in isolating a gasholder a short distance from the engine room.

**North British Association of Gas Managers** will hold their Annual Meeting at St. Andrews on Sept. 12.

**Coke as Fuel at Electric Power Stations.**—According to the fourteenth Annual Report of the Electricity Commissioners, which has recently been issued by H.M. Stationery Office, the coke breeze consumed for steam raising at electric power stations (mainly by means of the Sandwich system) for the year 1933-34 amounted to 234,438 tons. The coke breeze consumed during the year 1932-33 was 252,005 tons, according to the same authority.

**At the Monthly Meeting** of the Buckhaven and Leven Gas Commissioners on May 13 the Finance Convener, Councillor Brewster, reported that the accounts for the past month totalled £7,098. Outstanding accounts at April 30 were £674 as against £831 at April 30, 1934. At the end of April £11,069 stood at the credit of the revenue account, £311 more than a year ago, while the capital indebtedness of the Undertaking was £81,248, being £5,047 less than last year.

**The Annual General Meeting of the British Standards Institution** will be held in the theatre of the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W. 1, on Tuesday, May 28, 1935, at 11.15 a.m. The business of the meeting will be to elect the General Council, to receive the accounts, to appoint auditors and fix their remuneration, and to receive a brief statement from the chairmen of the various divisional councils and industry committees on the progress of the Institution's work.

**A Decorated Lorry** was entered by the Wandsworth and District Gas Company at the Carnival Displays recently held in connection with the Jubilee Celebrations at Wimbledon and Epsom, which was successful in securing the First Prize on each occasion. The display was arranged to show the method of gas production and distribution, a miniature Coal Mine being built showing two colliers actually at work, together with gasholder and suitable display of appliances. The whole display was designed and carried out by the District Superintendent, Mr. J. Davis, and the staff at the Sutton depôt.

**At a Recent Meeting** of the Hereford City Council the Gas Committee stated that the Engineer and Manager had submitted a letter from the Hereford County Master Bakers' and Confectioners' Association intimating that from enquiries made in towns within 30 miles of Hereford it appeared that no bakers were charged as much for coke as the bakers were paying in Hereford, and generally urging a reduction in the Corporation's present yard price of coke. A deputation had appeared before the Committee, who had resolved that the yard price of coke be reduced from 31s. 8d. to 30s. per ton as from May 7, 1935, until the September meeting of the Committee, when the question be again reviewed. It was remarked that the demand for the undertaking's coke was such that they frequently had to buy coke themselves, and the Bakers' Association had expressed their preference for the Hereford coke. Hereford bought the best coal for their undertaking and produced a very good coke, of which the heating quality was far above that sold by other vendors. The Gas Committee's resolution was confirmed.

**To Whom Does the Money in the Gas Meter Belong?**—This issue was argued at Liverpool County Court on May 15, when Herbert Edward Weaver, 169, Queen's Drive, West Derby, sued the Liverpool Gas Company for the recovery of 3s. 7d. In consequence of a robbery, when the house was broken into the meter only contained 1s. 4d. The Company maintained that 14s. 10d. was due to them. Defendants retained 3s. 7d. discount, which had the account been paid, would have been due to plaintiff. The Company alleged that Mr. Weaver agreed that he would make good the meter deficiency at 2s. a week. Plaintiff contended that he was only liable for any loss due to negligence on his part, and could not be asked to pay again. He had discharged his liability by paying through the meter. Mr. A. L. Edwards, Principal Assistant to the Treasurer of the Company, said it was the practice of the police when prosecuting to refer to money stolen from gas meters as the property of the Gas Company. Last year, out of 139,000 meters, there were 3,000 robberies recorded. Mr. Pritchard said the Company had to protect themselves by a clause in the contract under which the loss by robbery fell on the consumer. The judge said it seemed clear that the consumer was liable. Judgment was given for the Company on the claim and the counter-claim with costs.

## Institution of Gas Engineers

Dr. Arthur G. Glasgow's Lecture on "The Tactical Use of Carburetted Water Gas as a Coal Gas Auxiliary." to be delivered at the 72nd Annual General Meeting of The Institution of Gas Engineers on Wednesday, June 5, will not be published—unlike the Papers to be presented and discussed—in advance of the Meeting, but it will be reported in our columns later and in the Transactions of The Institution.

By permission of H.M. Office of Works, the Gas Light and Coke Company has consented to floodlight St. James' Park on June 4-7 during The Institution Meeting.

## Liability for Gas Leaks

At a meeting of Bo'ness Town Council on May 14, a letter was read from Mr. Robert Taylor, Secretary to Bo'ness Gas Light Company, Ltd., intimating that on April 19, information was received at the Gas-Works that certain of the inmates of three southmost houses at Snab Row were complaining of sickness and headaches and it was suggested that the Company might ascertain whether there was an escape of gas.

The Engineer and Manager, Mr. A. D. King, knowing of the Town Council's operations in the roadway at Snab Lane, immediately investigated the matter and found the supply pipe in the lane fractured in two places. Steps were at once taken to stop the escape of gas. As the damage to the supply pipe was caused by the Town Council's operations, Mr. Taylor intimated that the Company would hold the Town Council liable for the loss which they might sustain in consequence of the above-mentioned damage.

In reply to a member, the Town Clerk said that on receipt of the letter he at once wrote the Gas Company repudiating all liability and there the matter rested.

## Further Jubilee Efforts

From all parts of the country we continue to receive reports of the success achieved by gas undertakings in the celebration of Their Majesties' Silver Jubilee. In the Torchlight Procession at Basingstoke, the Gas Company deservedly won the first prize in the section for commercial vehicles with their entry. The Market Hall Gas Department presented a very fine window display depicting twenty-five years' progress in gas cooker and fire design.

Floodlighting of the lakes and surroundings at Peel Park and Bowling Park, Bradford, proved so popular that by general request the scheme is being continued on Monday, Wednesday, and Saturday evenings until further notice.

The Corporation of Newbury Gas Department entered a lorry in the local Jubilee Carnival, and, although they were not successful in obtaining a prize, they received a "Highly Commended" Certificate. The Department also successfully augmented the lighting in the Market Square to enable dancing to take place until 2 a.m. At Stockport the Gas Department arranged a very attractive display, incorporating the new "R.A." cooker in conjunction with the Parkinson Stove Company, Ltd., which aroused a great deal of interest. Stoke-on-Trent floodlighted the following local buildings by gas: Longton Town Hall, Stoke Town Hall, Trentham Parish Church, and St. James' Church, Longton. The floodlighting of St. James' Church was the subject of a letter to the *Staffordshire Evening Sentinel*, in which it was stated that "the whole scheme was well planned and the results most extraordinarily pleasing and effective."

A decorated lorry entered by the West Bromwich Gas Department in a Jubilee procession was described in the local Press as "probably the best commentary upon the improvement of modern times in the procession." The lorry contrasted the cooking and heating methods of 1910 with those of 1935.

## Cupar Gas Offer Rejected

A second effort by a London syndicate to acquire the shares of the Directors of Cupar Gas Company, Ltd., has failed.

On May 16, the shareholders received the following letter from Mr. J. MacPherson, Engineer and Secretary:

"I am instructed by the Directors of this Company to inform the shareholders that the Directors have received an offer from a recently-formed holding company for the acquisition of their shares in this Company. The offer also included a suggested payment to the Directors as compensation for loss of office.

"Your Directors have given the matter most careful consideration, and have decided, in the whole circumstances, to inform those who made the offer that their proposals for the acquisition of the shares held by the Directors will not be entertained.

"In their offer the holding company state that they are willing to purchase the shares held by other shareholders of the Cupar Gas Company, and the Directors would suggest that if any shareholders are approached with a view to the sale of their shares they should, before taking action, communicate with them."

## South Metropolitan Ambulance Tests

### Good Samaritan Trophy Competition

The annual first-aid competition for the Good Samaritan Trophy was held at the South Metropolitan Gas Company's Co-Partnership Institute at the East Greenwich Works on Tuesday, May 14.

The runners-up in last year's contest, which was won by the Vauxhall team, were the Women Employees, but this year they secured a runaway victory over the holders, securing 311 points out of a possible 400 or 77·7% of the available points. This excellent performance is ample proof of the high standard of efficiency that the Company aims at maintaining among its first-aid teams. The individual placings were as follows: Women Employees 311, Vauxhall 280, Slot Meter Department 258, East Greenwich 253, District Meter Shop 236, Headquarters 231, Chemical Works—Phœnix Wharf 228, and Old Kent Road 206.

The points awarded to each team are the aggregates of the individual and team tests which were judged by Capt. A. C. White-Knox, M.B., and Dr. R. B. Duncan, M.D., respectively. A vote of thanks was accorded the judges by Mr. Henry Lesser, Service Secretary, for the able manner in which they had staged the display. Replying to the vote of thanks, Dr. Duncan said that the marks awarded showed that the South Metropolitan Gas Company's ambulance teams were greatly improved and added that it had been a great pleasure for him to judge the competition. Capt. White-Knox also responded and said he was greatly impressed by the way in which the teams handled their cases that day.

## Forthcoming Engagements

**May.**

23.—SOUTHERN ASSOCIATION (EASTERN DISTRICT).—Meeting at 28, Grosvenor Gardens, 2.30 p.m.

23.—WALES AND MONMOUTHSHIRE ASSOCIATION.—Annual Meeting, Royal Engineers' Hall, Llanelly. Presidential Address of Mr. H. Barker.

28.—NATIONAL JOINT INDUSTRIAL COUNCIL FOR THE GAS INDUSTRY.—Annual Meeting, 28, Grosvenor Gardens, S.W. 1, 12 noon.

29.—B.C.G.A.—Midland District Conference at Worcester.

**June.**

3.—I.G.E.—Finance Sub-Committee, 1.45 p.m.; Membership Sub-Committee, 2.30 p.m.; General Purposes Committee, 3.15 p.m.; Council Meeting, 4.30 p.m.

4-7.—I.G.E.—Annual General Meeting in London.

11.—I.G.E.—Gas Education Executive Committee, 4 p.m.

19.—ASSOCIATION OF STATUTORY INSPECTORS OF GAS METERS.—Annual General Meeting, County Hall, Westminster, 10.15 a.m.

20.—I.G.E.—Refractory Materials Joint Committee, Stoke-on-Trent, 2.30 p.m.

21.—NORTH OF ENGLAND (AUXILIARY) ASSOCIATION.—Half-Yearly Meeting at Newcastle-upon-Tyne. Address by Mr. S. A. Wikner.

22.—LONDON AND SOUTHERN JUNIOR ASSOCIATION.—Summer Visit to Winchester.

25.—SOUTHERN ASSOCIATION.—Visit to Guildford.

26.—I.G.E.—Oral Examinations in Gas Engineering and Gas Supply, Board of Examiners, 9.30 a.m.

28.—WAVERLEY ASSOCIATION.—Annual Meeting in Edinburgh.

**July.**

5.—MANCHESTER DISTRICT ASSOCIATION.—Meeting at Cleckheaton.

6.—WESTERN JUNIOR GAS ASSOCIATION.—Summer Meeting at Weymouth.

9.—N.G.C.—Meeting of the Central Executive Board.

**Sept.**

12.—NORTH BRITISH ASSOCIATION.—Annual Meeting at St. Andrews.

## National Gas Council

### Meeting of the Central Executive Board

A meeting of the Central Executive Board of the National Gas Council was held at the Hotel Metropole, Northumberland Avenue, London, W.C. 2, on Tuesday, May 14, 1935, at 12 noon. The Chair was taken by Sir DAVID MILNE-WATSON, LL.D., D.L.

*Nomination of a Candidate for the Office of President.*—Sir David Milne-Watson was nominated as a candidate for the office of President in accordance with Rule 4 of the Constitution for recommendation to the Annual Meeting to be held later that day.

*Parliamentary. Housing Bill.*—It was reported that the Standing Committee of the House of Commons dealing with this Bill had now concluded their deliberations, and that the Bill had been reported to the House. All the amendments put down on behalf of the Public Utilities (with the exception of that relating to compensation) had been accepted in principle by the Government. A deputation of the Conjoint Conference had waited upon the Minister of Health for the purpose of discussing the question of compensation.

*Rating.*—A case in which the Gas Company desired to appeal from Quarter Sessions to the High Court against the assessment of the Company was considered. It was reported that the opinion of Counsel had been taken on the points at issue, and it was decided to refer the matter to the Rating Committee of the National Gas Council.

*Development (Loan Guarantees and Grants) Act, 1929.*—It was reported that the two cases selected for the purpose of testing the liability of grants made under the above Act to income-tax were heard before the Special Commissioners on May 7. It is satisfactory to report that the Special Commissioners held that the grants made under the Act were not liable to income-tax.

*National Illumination Committee of Great Britain.—International Commission on Illumination—Plenary Meeting, July 2-5 in Berlin, and July 8-10 in Karlsruhe.*—It was unanimously decided to ask Mr. Robert Watson to represent the National Gas Council at these meetings.

*Date of Next Meeting.*—It was agreed that the next meeting of the Board should take place on Tuesday, July 9.

## New "Finance Service" for Gas Industry

"A scheme to facilitate the adoption of modern gas appliances by undertakings and their sale throughout the country on easy terms" is announced in a new financing service offered by Gas Consolidation, Ltd., the £500,000 holding company formed last year by Dawnay Day & Co., Ltd.

Gas Consolidation, Ltd., offer a service which they say is planned to meet the special requirements of the Gas Industry to provide gas companies and undertakings with the finance required to promote sales of modern home appliances to consumers on easy terms. The service will also include finance for the purchase of new equipment and the extension of operations.

The demand for the new type of appliances, it is stated, is so great that many companies find that to supply them on easy terms constitutes a drain on their statutory capital. By the new scheme, the promoters claim, a wide range of appliances would become immediately available, without the necessity for any increase in issued capital.

## Imperial Continental Gas Association

### Report of the Directors

The Directors of the Imperial Continental Gas Association submit their report upon the trading results of the Association for the 111th year of its commercial activity, ended March 31, 1935, showing that the Association's subsidiary and allied companies have made satisfactory profits, with the exception of the Cokeries du Brabant, for the loss sustained by which adequate provision has been made.

The gas undertakings at Flushing and Prague have been sold and that of the Commune of Ixelles (Brussels) has been transferred to an intercommunal company, the contract having been renewed until 1969 on a profit-sharing basis.

The audited statement of accounts shows that the balance to the credit of the profit and loss account was £523,093 and balance brought forward £485,782, making total available for appropriation £1,008,875. Out of this balance there has been paid on the capital of £5,600,000 an interim dividend of 5% less income-tax at 4s. 6d. in the £ amounting to £217,000. The Directors recommend the payment of a final dividend of 7%, less income-tax, making a total dividend of 12%, less tax, for the year, leaving a balance to be carried forward of £488,075.

Sir Henry Birchenough has resigned the position of Deputy Chairman, but is retaining his seat on the Board. Monsieur Georges Theunis resigned his Directorship of the Association upon being appointed Prime Minister of Belgium in November last. Under the by-laws of the Association, Sir George Jessel, Bt., M.C., and Sir John R. Chancellor, G.C.M.G., G.C.V.O., D.S.O., retire from the Board by rotation. These gentlemen, being eligible, offer themselves for re-election.

The Rt. Hon. Sir Francis Lindley, G.C.M.G., C.B., C.B.E., has been appointed to the Board. In accordance with the by-laws of the Association, he retires and offers himself for re-election. The Auditors of the Association, Messrs. George A. Touche & Co., offer themselves for re-appointment.

## Amalgamation and Grouping

### *Severn Valley and Newport (Mon.).*

Offers were posted on May 13 from Severn Valley Gas Corporation, Ltd., to stockholders of Newport (Mon.) Gas Company, offering to acquire their holdings.

### *Swindon and Fairford.*

The offer of the Swindon United Gas Company to the Fairford Gas Light and Coke Company has been accepted by all the shareholders of the latter Undertaking. Subject to agreements the Company will come under the management of the Swindon United Gas Company as and from July 1.

### *The Caledonian Gas Corporation.*

The Caledonian Gas Corporation, Ltd., which has a share capital of £625,000 and whose registered office is at 4, Albyn Place, Edinburgh, is negotiating for the purchase of several gas companies in Mid and West Lothian. An offer has been made for the purchase of the share capital of West Calder Gas Company, and the Directors have recommended the shareholders to accept. An offer was also made to purchase the share capital of Fauldhouse Gas Company, and the Directors have recommended acceptance. It is understood that the Directors of other gas companies have also been approached with a view to the purchase of the share capital and that negotiations are proceeding.

## The New Acme Gas Range

Truly remarkable results are claimed to have been achieved by the new Acme gas range for fish and potato frying by the manufacturers, Acme Engineering Company, Limited, Stocks Hill, Holbeck, Leeds 11. The reductions in operating costs brought about by the high efficiency of the range make frying by gas considerably cheaper than by the breeze range.

Formerly the breeze range was preferred by friers for two reasons. Firstly, owing to inefficient application, gas as a fuel was rather more expensive than breeze and, secondly, gas ranges were slower and would not stand any forcing. Gas scored, of course, on the counts of cleanliness and convenience. A considerable advance on figures previously obtaining is claimed by the manufacturers who state that they have been successful in obtaining an efficiency of 65%. The following significant figures were obtained by a frier who had installed an Acme range:

*Average Weekly Performance with Previous Gas Range.*

| | |
|---|---|
| Quantity cooked . . | 53 stones fish and 15 cwt. potatoes = 173 stones cooked food |
| Gas used . . . . | = 9,192 cu.ft. |
| ,, ,, per stone . . | = 53·13 ,, |

*Average Weekly Performance with New Acme Range.*

| | |
|---|---|
| Quantity cooked . . | 56 stones fish and 18 cwt. potatoes = 200 stones cooked food |
| Gas used . . . . | = 6,803 cu.ft. |
| ,, ,, per stone . | = 34·0 ,, |

The same man has increased his output by 20 stones per week and has effected a saving of nearly 4,000 cu.ft. of gas per week. The Acme Engineering Company have introduced a novel feature in range back design in which a system of floodlighting has been incorporated. This adds greatly to the appearance of the range.

# Centuries at Hereford

The recorded history of Hereford extends over 13 centuries, and the first Mayor of the city was elected 5½ centuries ago. Two of the present Aldermen—Alderman Charles Witts and Alderman Wallis—have been members of the City Council for over a century between them. These facts may be fittingly recalled while referring to the visit, on May 16, of the Midland Association of Gas Engineers and Managers, when the century mark was well passed by the attendance of members and friends at a luncheon in the Town Hall, at the invitation of the Chairman and members of the Hereford Gas-Works Committee.

## A Good Slogan.

This pleasurable function was preceded by a visit to the gas-works, of which the President of the Association, Mr. Arthur Roberts, is Engineer and General Manager. Here the main item of interest was the installation of Woodall-Duckham continuous vertical retorts, at the formal inauguration of which five or six years ago some of us had been present. The guaranteed capacity of the installation (which comprises twelve 62-in. retorts in one bench, heated by means of two producers placed at ground-floor level, at one end of the bench) is 1,200,000 cu.ft. a day. There is also a Humphreys & Glasgow carburetted water gas plant, with a capacity of 525,000 cu.ft. a day, which is used for extra loads and as a stand-by unit. Each of these gas producing plants is provided with its own waste-heat boiler, Herefordshire is an agricultural county, and there is a fair market for sulphate of ammonia, which is made in a C. & W. Walker plant, equipped with a Watson-Laidlaw centrifugal dryer. For treating the tar a Woodall-Duckham "T.I.C." dehydrating plant has been provided; while for the prevention of naphthalene deposits a Parkinson & Cowan heater to vaporize oil has been installed.

These are a few of the points noted during an inspection of the works, under the guidance of Mr. Roberts and members of his staff. One of the other things that specially appealed was a remarkably apt slogan painted upon the Department's vans: "Avoid guesswork; substitute gas work."

## Gas Lighting Enthusiasts.

Though Hereford is not, in the usual acceptation of the term, an industrial centre, the mildness of its agricultural atmosphere exists side by side with a keen and progressive business outlook. So far as the gas undertaking is concerned, this fact was emphasized at the luncheon by Mr. C. M. D. Belton, of Shrewsbury, who, on proposing the toast of "The City of Hereford," remarked that the great progress of the concern during the past quarter-of-a-century provides outstanding testimony to the ability of Alderman Charles Witts, who has been a member of the Gas Committee for 48 years and Chairman for no less than 30 years, and a member of the Council for an unbroken period of over 50 years. "In fact," proceeded Mr. Belton, amid laughter and applause, "this progress has no doubt been due to some extent to the Corporation having kept their wits about them."

The Mayor (Councillor J. Vincent Shaw), who is the 554th of his line, in his response, spoke of the delight of the Corporation at seeing Mr. Roberts (who was born and bred in the city) in the Presidential Chair of the Midland Association. "We are," the Mayor went on to say, "very proud of all that Mr. Roberts has done in connection with the Gas Department. We honour him, and pay tribute to his worth. The city is really well lighted, and largely by gas. Only a very small portion is lit by electricity, and it is quite possible that before long the city will be lighted entirely by gas. We have a five-year plan for re-lighting, and better lighting, and we hope at the end of that period to have the city perfectly illuminated."

Alderman Witts, who had gone down to the gas-works in the morning to welcome the visitors, and who occupied the chair at the luncheon, pointed out that this was the first visit of the Association to the city since it formation 57 years ago. During his Chairmanship of the Gas Committee, Hereford had trained no less than five men who had got on, and now occupied important positions in the Gas Industry. Proposing the toast of "The Visitors," he mentioned that they had with them that day, Mr. H. E. Stone, of Hong Kong (and at one time of Birkenhead), who was formerly a member of the Association.

Mr. Roberts, on behalf of the Association, thanked the Gas Committee for their generous hospitality, and expressed his deep appreciation of the efforts of his staff and the employees generally to make the visit a success.

Members of the Midland Association at Hereford.

## Building up a Business.

Luncheon over, conveyances were in waiting to take the visitors to Bulmers' Cider Works, facilities for an inspection of which were provided by kind invitation of the Managing Director (Mr. E. F. Bulmer) of Messrs. H. P. Bulmer & Co., Ltd. This visit left no one in any possible doubt as to where the apples go to, but some of us were left wondering what becomes of all the cider—popular beverage though it be. Like pygmies, we wandered hither and thither among huge towering vats of capacities from 120,000 gallons upwards. This one figure we will venture to state. Others were stupendous, though sober fact. In order that these giant vats may be the more certainly identified—for length of storage is an all-important matter in connection with cider production—names rather than numbers are appended to them. Here are persons and places represented—one bearing the label "Birmingham" appeared to be hailed with especial cordiality. Here are also to be found the names of birds—among them "Robin," and, most appropriate of all, "Swallow."

Well within a lifetime this wonderful business has been built up, literally from nothing, until it has become the largest of its kind in this country, if not in the world.

Before leaving, the firm's beverage was put to the test, and found not wanting; and Mr. Bulmer was cordially thanked for his kindness, on the proposition of Mr. Hubert Pooley, seconded by Councillor Bernard Powell, who had throughout the day devoted himself to the welfare of the visitors.

# District Conference of the B.C.G.A.

## York Minster Floodlighted by Gas for the Occasion

Delegates to the Yorkshire District Conference of the British Commercial Gas Association at York on Thursday received an official welcome from the Lord Mayor of York (Councillor H. E. Harrowell) who said that the Gas Industry knew that it had nothing to fear from competition provided it was given fair treatment.

In the absence through illness of the Chairman of the York Gas Company (Mr. C. B. Johnson), Mr. G. A. POTTER-KIRBY, the Vice-Chairman, presided at the morning session of the Conference. They were possibly more commercially minded than in the past, he said, and it might be difficult for them to realize that when the B.C.G.A. was formed in 1912 there were many administrators of gas undertakings who took the view that their duty was performed when the gas was made and that if the public wished to use their product they would ask for it. They realized now that the duty was laid on them to know more about the possibilities of their commodity than the general public and to keep the public informed, by all those means open to commerce, of the manifold uses of gas and the appliances available for its consumption. The public mind had been imbued with the idea that a happy and healthy life depended first on the possession of a healthy, convenient home, and he felt justified in claiming that the Gas Industry had a contribution of first-class importance to make in this connection.

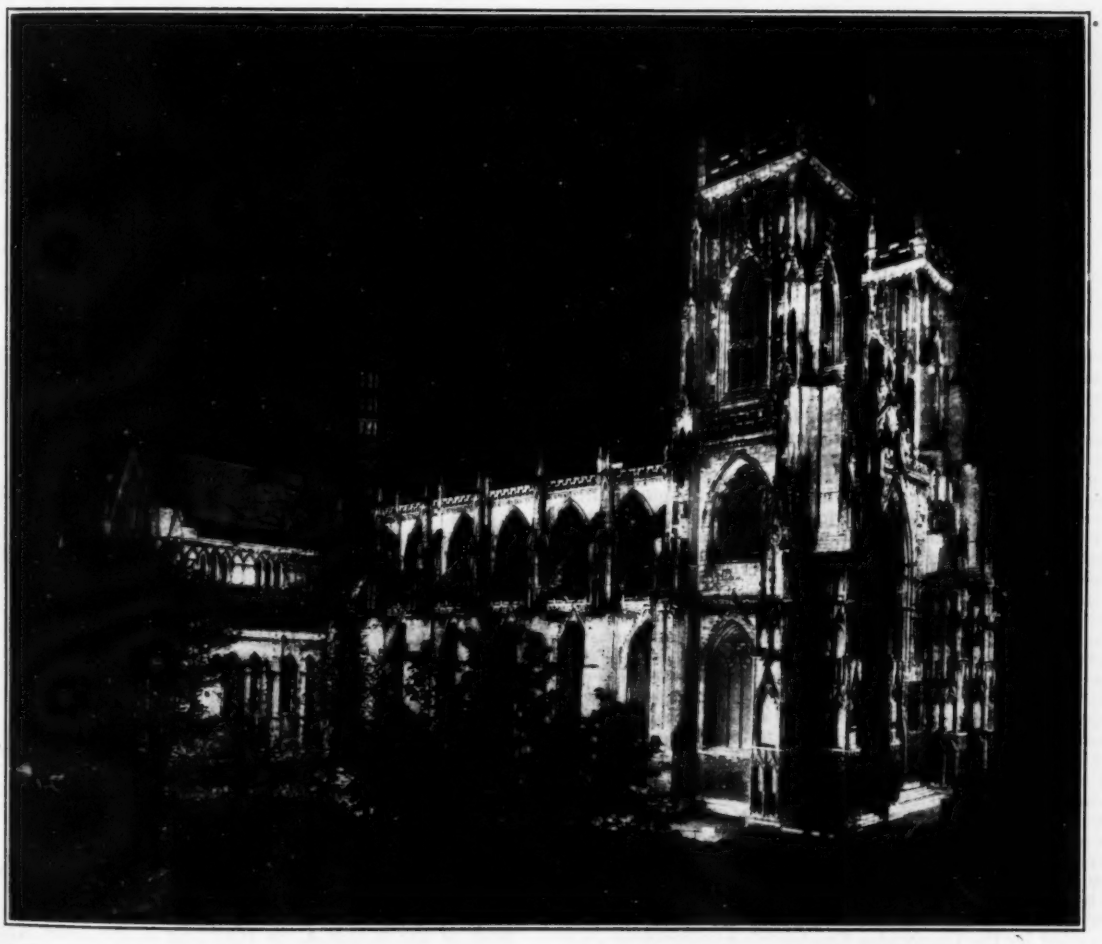
Mr. R. D. S. LIVETT, A.R.I.B.A., Director of Housing to the City of Leeds, in his address on "Municipal Housing Equipment," stated that it was not sufficient to build houses and equip them with modern labour-saving appliances. They must remember that the majority of the tenants now being re-housed came from houses that were totally unfit for human habitation and devoid of practically all modern equipment. These tenants must be instructed at an early date in the working and upkeep of the equipment, and any assistance that could be given in that direction by manufacturers, distributors, gas companies, and municipal gas departments would be most valuable not only to the tenants but to those responsible for the great task of re-housing. He considered that in a municipal house provision for gas cooking was essential. The question of smoke abatement, he added, had received careful thought in Leeds. They were encouraging the burning of coke, and every municipal house was provided with a gas poker.

Sir FRANCIS GOODENOUGH, C.B.E., proposing a vote of thanks to Mr. Livett, said that graphs had shown that as gas consumption went up, deaths went down. Speaking of the two alternatives to gas for domestic lighting, he said that if electricity were forced on poor people they would start immediately to use oil, since they could not afford electricity. That had happened already in some areas and the risk of accidents with oil had thereby increased. There was evidence that the prepayment gas meter had wiped out a hundred deaths a year from oil accidents.

### Electric Lighting and Eyesight.

Alderman F. J. COWIE, Chairman of the Bradford Gas Committee, said that their Medical Officer of Health had told him that, from his experience of certain schools in that city, sight deterioration was caused at an early age by electric light. The number of scholars who had to be supplied with glasses was three times more in the secondary schools where electric light was general than in the elementary schools.

A luncheon to the delegates was given at the Royal



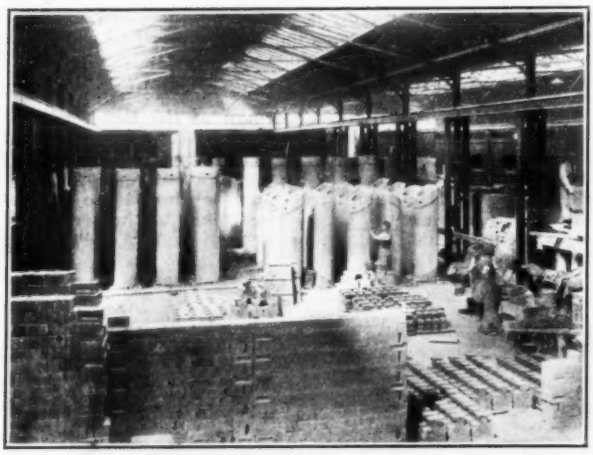
This remarkably fine piece of floodlighting—of York Minster by the York Gas Company in connection with the recent B.C.G.A. District Conference in that City—must represent one of the largest individual buildings ever to be floodlighted by gas. The topmost pinnacles of the towers, as our photograph shows, stand out clearly illuminated though 200 ft. from the floodlamps on the ground, while the even lighting of the whole exterior is particularly noteworthy, bringing out every detail in the beautiful architecture of the Minster.

Station Hotel by the Chairman and Directors of the York Gas Company. Mr. POTTER-KIRBY presided, and the toast of the City of York was proposed by Sir FRANCIS GOODENOUGH, and that of the Gas Industry by Mr. ROGER LUMLEY, M.P. for York. The DEAN OF YORK (the Very Rev. H. N. Bate) responded to the toast of the visitors proposed by the CHAIRMAN.

During the afternoon delegates visited the six all-gas cottages erected by the York Gas Company at Layerthorpe, adjacent to the works; the pneumatic coal handling plant and the benzole plant; and also the Company's travelling showroom.

The women's session of the conference was held in the De Grey Rooms, the Lady Mayoress (Mrs. Harrowell) presiding. She was received by Mrs. H. E. Bloor and by Mrs. Potter-Kirby, who presented her with a bouquet. Mrs. Eileen Murphy addressed the assembly. She said that 99% of the houses in this country were designed and laid out by men. Those men might know all about drawing plans, digging foundations, plumbing, and carpentry, and so on, but they did not quite know what a woman wanted in her house. Let them take the question of colour, she said. Men in general were were not colour conscious. Most of them had dreary, colourless offices; their clothes were like mottled enamel, serviceable but not vivid. If builders and decorators were made to wear red trousers and fancy waistcoats there would soon be plenty of colour in new houses.

Delegates to the conference were especially interested in the floodlighting of York Minster and neighbouring buildings—the Jubilee display being repeated for their benefit on Wednesday and Thursday evenings. Mr. H. E. Bloor, Engineer, Manager, and Secretary of the York Gas Company, received many congratulations from his colleagues in the Industry, and it was stated that nowhere in the country had gas floodlighting been used to greater advantage. The pinnacles of the Minster were over 200 ft. away from the lamps and 300 ft. from the Central Tower; but the features of the stonework were clearly visible. The Dean of York, at the luncheon, paid a very high tribute to the work that had been done.



A Section of the Retort Setting Department of Williamson, Cliff's Fireclay Works, Stamford.

# Eastern Counties Association Visit Fireclay Works

Members of the Eastern Counties Gas Managers' Association had the opportunity of visiting during their Spring General Meeting at Stamford on May 15 the Fireclay Works of Messrs. Williamson, Cliff, Ltd.

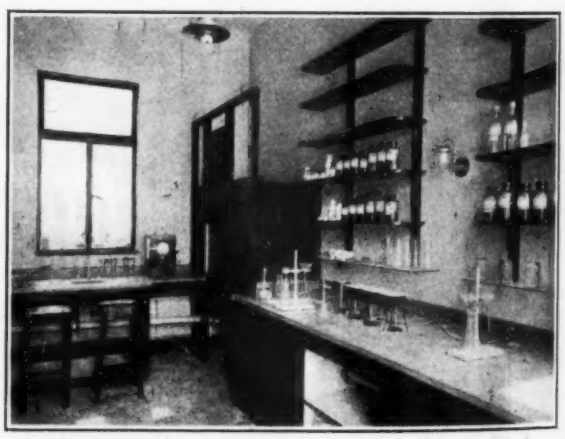
Seventy years ago Blashfield, the great artist in terra cotta, was making that material in Stamford, largely from clays got from land now owned and worked by Williamson, Cliff, Ltd.; and from the year 1870 (some say as early as 1840) firebricks have been made in Stamford.

Messrs. Williamson, Cliff, Ltd., who own over 200 acres of clay land, make all classes of refractory materials, including insulating bricks, blocks for cement works, and linings for locomotives. They specialize in the production of retorts and refractories for gas-works such as tongued and grooved or rebated bricks and blocks, regenerator tubes, charge hole blocks, and linings for water gas plants. The retorts supplied by the firm to gas undertakings are either made whole-piece from one of the very few retort machines in the country or are made by hand in siliceous segments. The demand for their products has been steadily growing, and last year the tonnage output showed an increase of 50% on that of the previous year. The making sheds, kilns, and stacking ground now cover an area of 8½ acres.

The Company own deposits of naturally plastic siliceous clays containing from 78% to 81% of silica, 12 to 13% of alumina, well under 2% ferric oxide, a total alkali content of under 1%, and of lime and magnesia under 1%. It also has a valuable deposit of fireclay containing about 43% of silica and 34% of alumina, which on test shows a refractoriness as high as 1,730° C. The Company have for many years imported large quantities of high-grade refractory clays and minerals, which are blended with the native clays to produce refractories for special purposes.

The kilns used are of the down-draught and continuous high-temperature type, and there is nearing completion one of the newer design of kilns with flat arch. Kiln burning is recorded by the Cambridge Company's pyrometers.

To meet its increasing business the Company has recently built new offices, showrooms, and messrooms. These were designed by the Company's Architects, Messrs. Traylen & Lenton, the design and materials of construction being much admired. They also designed the new laboratory building, which will be one of the most up-to-date refractory works laboratories in the Kingdom. It will be under the charge of Mr. A. Green, who has been largely trained by his brother, Mr. A. T. Green, F.I.C., so well-known in this and other countries for his work on refractories, and as Assistant Director of Research of the British Refractories Research Association, the Mellor Laboratories, Stoke-on-Trent. Mr. A. Green was an assistant under Dr. Mellor in the Clay Testing Department at Stoke-on-Trent and received full training and experience in the testing of refractory materials and in general ceramic chemistry at the North Staffordshire Technical College, where he obtained the Silver Medal with 1st class certificate for the senior students of the year. He was appointed to the Research Staff of the B.R.R.A. in 1932 and is the Joint Author of several Research Papers presented by the Refractory Materials Joint Committee of The Institution of Gas Engineers.



Laboratory Testing Room.

The new laboratory was formally opened on May 15 by Mr. J. H. Troughton, of Newmarket.

# National Gas Council of Great Britain and Ireland

The Seventeenth Annual General Meeting, preceded by the usual Council's Luncheon—at which there were no speeches—was held at the Hotel Metropole, London, on Tuesday, May 14. The President of the Council—Sir DAVID MILNE-WATSON—presided at both functions.

The Minutes of the Sixteenth Annual General Meeting having been circulated were confirmed, approved, and signed.

### List of Members of the Central Executive Board, 1935.

The following list of members of the Central Executive Board for 1935 was announced:

*Chairman.*—Sir David Milne-Watson.
*Vice-Chairmen.*—Wm. Cash, F. H. Jones, Councillor G. H. Kitson, and Alderman J. H. Lloyd.
*Hon. Treasurer.*—Alderman Sir Wm. Kay.
*Hon. Secretaries.*—Sir Francis Goodenough, C.B.E., and W. E. Price.
*Trustees.*—Alderman J. H. Lloyd and John E. Daw.

*Eastern District.*—Frank Prentice (Ipswich), R. G. Shadbolt (Boston), H. Shewring (Cambridge), and W. W. Townsend (Colchester).
*Ireland.*—R. Bruce Anderson (Waterford, &c.), W. J. Grey (Alliance and Dublin), J. McNicholl (Cork), and J. D. Smith (Belfast).
*London District.*—Thomas Hardie (The Gas Light and Coke Company), F. H. Jones (Wandsworth), W. J. Sandeman (Croydon), and H. C. Smith (Tottenham).
*Manchester District.*—G. S. Frith (Runcorn), J. H. Sillitoe (Manchester), W. J. Smith (Bolton), and S. Tagg (Preston).
*Midland District.*—C. M. D. Belton (Shrewsbury), R. J. Milbourne (Wellington, Salop, &c.), Alderman T. Mitchell, O.B.E. (Stoke-on-Trent), and A. W. Smith (Birmingham).
*Northern District.*—J. E. Blundell (Carlisle), H. Lees (Hexham), T. P. Ridley (Newcastle-on-Tyne), and F. P. Tarratt (Newcastle-on-Tyne).
*Scotland.*—G. Braidwood (Coatbridge), J. Lang (Vale of Leven), J. W. Napier (Alloa), H. G. Ritchie (Falkirk), and Sir Wm. Whyte, O.B.E., additional member (not more than four representatives to attend Meetings of Board).
*Southern District.*—Chas. F. Botley (Hastings), Wm. Cash (Bournemouth), H. C. Head (Winchester), and A. Valon (Bexhill-on-Sea).
*South Wales District.*—Wm. Clark Jackson (Neath), W. H. Johns (Swansea), J. E. Kenshole (Aberdare), and H. D. Madden (Cardiff).
*South-Western District.*—S. E. Halliwell (Bristol), S. J. Ingram (Truro), Col. R. L. Norrington, C.M.G. (Plymouth), and W. N. Westlake (Exeter).
*Yorkshire (W.R.) District.*—H. E. Bloor (York), E. H. Hudson (Normanton), A. L. Jennings (Spenborough), and C. S. Shapley (Leeds).
*Representing the British Commercial Gas Association.*—R. Halkett, Councillor G. H. Kitson, Sir David Milne-Watson, and Councillor Walter Muter.
*Representing the Gas Companies' Protection Association.*—R. J. Auckland, R. W. Edwards, D. H. Helps, and Wm. Phillips.
*Representing The Institution of Gas Engineers.*—C. Valon Bennett, J. H. Canning, O.B.E., R. E. Gibson, and J. Terrace.

## Sir David Milne-Watson's Address

We are met together for our Annual Meeting at a time when the general rejoicings in connection with the Silver Jubilee of His Majesty the King are still in progress, and although our loyal congratulations have already been conveyed to His Majesty, by the British Gas Federation speaking for the Gas Industry as a whole, I feel sure that it will be your wish that before beginning our business we should as a Council endorse what has already been said on our behalf in regard to our loyalty and devotion to His Majesty's Throne and Person.

The celebrations have taken many forms, and it is most gratifying to us that our Industry has been able in many places to play no inconsiderable part in lending brilliance to the scenes of our national rejoicings.

I now have pleasure in moving that the Annual Report and Statement of Accounts for the twelve months ended March 31, 1935, which have been circulated to all members, be approved and adopted.

I do not propose to refer in detail to the year's work, which is set out subject by subject in the Report which you hold in your hands. I think it would be preferable if I were to content myself with something more in the nature of a bird's-eye view of the last twelve months.

This year has, I think, from many points of view, been one of outstanding importance to the Industry. It has seen the Industry tackling the problems with which it is confronted from three different angles—namely, from the business angle, from that of Parliament, and, lastly, from that which I might term the structure and organization of the Industry itself.

### The Business Angle.

From the point of view of business, the year which has just closed has, I regret to say, been a disappointing one—disappointing because up to the end of November the increase in outputs and business generally was undoubtedly very satisfactory, and led us all to believe that the accounts for the year would show material improvements upon those of the last few years. Unfortunately, the Clerk of the Weather ordained otherwise; an unprecedentedly mild December, followed—sad to relate—by an extremely open winter, reduced the domestic heating load to meagre proportions. We suffered the chagrin of seeing our increased outputs dwindling away day by day, with the result that the percentage increase of gas sold by the Industry as a whole was only a few decimal points higher than it was in the previous twelve months. We have, however, the satisfaction of knowing that the conditions which brought this result about were abnormal, and due to circumstances over which we had no control. Hard winters and cold weather will come again, with corresponding benefits to the Industry which we serve.

It does, however, emphasize the fact that we are to-day, as an Industry, largely dependent, and possibly too largely dependent, upon climatic conditions. I hope and believe that everyone in this room has now been convinced that the National Bodies were wise in formulating a policy for the purpose of extending the use of gas for commercial and industrial purposes. Evidence is conclusive to prove that those undertakings which have devoted their energies to the industrial and commercial consumer have reaped a benefit which those undertakings which have devoted themselves solely to the domestic consumer have failed to reap. I once again take the opportunity at this Annual Meeting of urging all Undertakers to become members of a Gas Development Centre. The co-ordination between these Centres and the Central Bureau has been materially improved; information is now freely circulated between these Centres, and I can affirm with confidence that there are but few problems which have not already been, or are in the course of being, solved by this organization.

The field for gas in this direction is almost illimitable. Gas is recognized as the fuel without compare, and is warmly welcomed by industrialists and others, provided, of course, that the charges demanded are on a competitive basis with those asked for other fuel.

### Methods of Charge.

The awakening of interest in these new loads has brought in its train the additional advantage that it has compelled all of us who are interested in the subject carefully to

review the vital question of methods of charge. To assist undertakers in coping with this difficult but all-important subject, a Memorandum prepared and issued by the Council with the approval of the other National Bodies has been circulated to all members. It should, in my belief, be of material assistance to undertakers, and I commend it to you for your earnest consideration. It is, I think, now appreciated by all that it is quite impossible to lay down any hard-and-fast rule as to the appropriate method to be adopted by any particular undertaking. The facts and circumstances of each case can alone determine the method which is most suitable for an individual undertaking, and I should like to remind members that if they desire any advice or help in connection with the subject, which undoubtedly bristles with many difficulties, they would be well advised to consult Mr. Fottrell.

Parliament has rendered it easier for us to adopt proper methods of charge by passing the Gas Undertakings Act, which came into force last year. This measure, when it first saw the light of day, was undoubtedly a somewhat weak and feeble affair. The Council can, I think, congratulate itself on the success it achieved in obtaining the insertion of many and varied amendments which, taken altogether, have undoubtedly rendered the Act of considerable service to the Industry. While the Government refused—and, if I may say so, for what appeared to us no valid or convincing reasons—to confer upon our Industry the same facilities and powers as are enjoyed by our rivals—and notably the power of imposing a minimum charge—yet it has indicated, on the other hand, its strong disapproval of the action of certain local authorities in endeavouring to take advantage of their statutory position as housing authorities to deprive the poorer classes of the community (whose welfare is entrusted to them) of the power of selecting the heating, lighting and cooking media which they desire. The action of these local authorities is indefensible in my opinion. It savours of authoritarian states and is quite foreign to British tradition. It causes me genuine regret to have to state that in spite of the proclaimed view of Parliament and the provisions of Sections 27 of the Act, there are still numerous local authorities which endeavour, by hook or by crook, to hamper, handicap, and harass gas companies serving their communities, while, on the other hand, they mulct them in heavy rates and do not hesitate to acquiesce in the increase of their assessments. It is not only that the trading is unfair in these circumstances, but advantage is taken of the rates, to which gas companies so largely contribute, to bolster up the electricity undertaking at the expense of the gas company.

If these practices continue, it may well be that the National Gas Council will have to assist certain Undertakings in the promotion of Private Bills to remedy the situation. One thing is certain, and that is that we shall not sit quietly down and acquiesce in the perpetuation of a series of gross injustices.

## The Electricity Supply Act.

While Parliament have been kind to us, they have been more than kind to our competitors. The Electricity Supply Act which became law this year has, at a stroke, destroyed the two fundamental principles underlying the previous measures relating to the Central Electricity Board.

These cardinal principles were, in brief, first, that the Central Electricity Board should act only as wholesalers of current, and, secondly, that the current which they sold to authorized undertakers should be sold at the charges definitely laid down by Statute.

Under the provisions of the recent Act, the Central Electricity Board can, under the guise of "special circumstances," sell current to authorized undertakers upon tariffs other than those previously prescribed by Parliament, and can, moreover, retail current direct to the railways, not only for lighting but generally for transport purposes.

The reasons for the Bill—and the almost indecent haste with which it was passed through Parliament—are easy to explain. The recognition that the finances of the grid are far from sound, and that the chances of it being able to pay out of its revenue the interest on the capital raised are remote, has induced Government to pass the Bill. We must be vigilant to ensure that the inability to pay interest on its capital is not made an excuse for further assistance or further subsidies.

Brief mention should, I think, be made of the Housing Bill, not so much from the point of view of referring in detail to the amendments which are being moved for the purpose of protecting the interests of Public Utility Undertakers, but rather to call attention to the fresh duties and responsibilities that will be placed upon Public Utility Undertakers when the Bill is passed into law, if the needs of the community are to be fully met. In spite of the restrictive and coercive measures of certain housing authorities, to which I have already made some allusion, the occupiers of housing estates demand gas, and it is "up to" every one of us to see—even though this may call for additional capital expenditure—that the needs of the community are met. Our rivals are straining every nerve to make these houses "all-electric" or as nearly "all-electric" as possible. I am satisfied that they will fail completely in their endeavours, provided always that each and every one of us is on the alert and does not lose the opportunities that are put before him.

## Structure and Organization of the Industry.

The third and last direction in which opinion has notably changed during the last year is that which relates to the structure and organization of the Industry itself. It is, to my mind, heartening to see such evident recognition of the need for the closest co-operation between undertakers, and of a will to sink the parochial outlook in the wider viewpoint. It was but a few years ago that local authorities almost always refused to take a bulk supply from their neighbour if this neighbour happened to be a company. Coke oven gas was often barred merely because it was manufactured in coke ovens. Appreciation of the value of grouping undertakings and the extension of gas supplies to cover wide areas was indubitably lacking. To-day that is all being changed, and I am confident that we are entering upon a new era in which parochialism (if I may use this term without any offence) will be a thing of the past.

Much animated discussion has, as you are well aware, taken place with regard to the merits or demerits of what have been termed "holding companies." This question, together with the wider one of the grouping of gas undertakings, is now under consideration by a Special Committee of the National Gas Council, consisting of representatives from each of the districts.

Above and beyond this question, however, is that of the organization of the National Bodies themselves. While I feel that each of the National Bodies is fulfilling its duties efficiently and well, yet the ambit of these duties is closely defined and limited in each case. But the problems with which we have to deal to-day often present features which spread beyond the jurisdiction of any one of the National Bodies and call for consultation with one or more of the others. A common policy has to be decided upon or common action has to be taken. That difficulty we have in great measure overcome by the creation of the Joint Co-ordinating Committee, which, in turn, has found it essential to appoint sub-committees to deal with specific questions of common interest. In overcoming the difficulties, however, we have had to impose fresh burdens upon many of our members.

Even in the case of purely sectional matters, the work falling upon individual members has greatly increased in recent years.

Complex questions—and they constantly tend to become more numerous—demand special detailed study; sub-committees have to be appointed to deal with them and again there is a call for volunteers. They respond with splendid loyalty, but the burden upon men, all of whom hold positions of the utmost responsibility, tends to become intolerable. Paraphrasing the words of the prophet, we may well cry "to the making of committees there is no end and much Committee work is a weariness to the flesh!"

You cannot, of course, run the affairs of a great industry without hard work and loyal service. That we have always had in the past and I know that we shall have it in the future, but by re-organization we must do our utmost to mitigate the strain of services which are given so ungrudgingly and so well.

## The British Gas Federation.

There is another change in our organization—now happily accomplished—to which I must refer. Hitherto we have had no one organization which could be said to be representative of the Industry as a whole. In the past the Society of British Gas Industries (that is to say, the organization representing the contractors and manufacturers of plant and appliances) though working in close harmony with us has not been formally associated with the work of our National Associations. That defect has been cured to the satisfaction of all, for, by the creation of the British Gas Federation we now have a body which when occasion arises can speak and act for the whole industry. The auspicious inauguration of the Federation at a great banquet under the Presidency of Lord Macmillan is still fresh in our memories.

In conclusion, I would like to say again what in effect I have often said before. We may have difficulties to face, but that is no new experience for the Gas Industry. In our long history we have faced many difficulties, and we have invariably overcome them. What we have done before we can do again. The Industry is stronger than it

has ever been, and with the gradual improvement in economic conditions, further opportunities for development and expansion are constantly presenting themselves, so that given hard work, unity and goodwill, we can look to the future with unabated confidence.

In conclusion, the President moved that the Annual Report and Audited Statement of Accounts for the twelve months ended March 31, 1935, as circulated, be approved and adopted.

Mr. WILLIAM CASH, who seconded the motion for the adoption of the Report and Accounts, dealt with one or two items in the accounts. He pointed out that the total expenditure for the year 1934-35 was slightly in advance of the two previous years, the highest figure being incurred in 1929-30. He regarded the fact that expenditure was kept relatively stationary as very satisfactory, having regard to the amount of work carried on by the Council. Following modern practice, the Council had, with the approval of the Central Executive Board, introduced a superannuation scheme for the staff, which so loyally supported and worked for them. It was a contributory scheme, and the net figure was the amount seen in the accounts after deducting the contributions of the staff. Stationery and printing was a little heavier than in the previous year, and there was the substantial decrease of over £400 in Legal and Parliamentary expenses.

Turning to the receipts, Mr. Cash pointed out that the increase was mainly accounted for by the introduction of the revised joint contribution.

Commenting on the adjusted subscription income, it was pointed out that the increase was due to the difference in allocation and partly to the inclusion of two annual subscriptions which came into this year.

Finally, on the Balance-Sheet, Mr. Cash remarked that the "Sundry Creditors" were substantially heavier to the extent of nearly £9,000, but, on the other hand, the "Cash in hand" had equally increased. The result of the year's operations was that the deficit had been reduced so that the accounts were on the right side for the year.

## Strenuous Days.

Mr. C. VALON BENNETT (President, Institution of Gas Engineers), supporting the motion for the adoption of the Report and Accounts, said he still remembered the occasion when the National Gas Council was formed. Those were strenuous days, but even then he did not believe they saw the difficulties which lay ahead. The necessity for the creation and continuance of the National Gas Council, however, was now universally recognized, and it was very interesting to peruse the contents of the sixteen previous Reports of the Council and to see how far they had progressed and the difficulties that had been overcome. Speaking as he did for The Institution of Gas Engineers, it was hardly necessary for him to say that that body desired to work in full harmony with all the other National organizations. The Institution welcomed the formation of the British Gas Federation, and they would leave no stone unturned to make it a success. The President had referred to the large number of Committees that existed—and in his own case they were legion—but he must make a slight reference to the Joint Co-ordinating Committee. That Committee was formed as the result of the National Conference of the Industry which was held on Feb. 7, 1933, when there were 400 representatives of the Industry present. That Conference was called really to consider the establishment of Gas Development Centres throughout the country, and the National Gas Council, The Institution of Gas Engineers, and the British Commercial Gas Association were requested each to nominate five members to that Committee which it was then decided to call the Joint Co-ordinating Committee. The Committee found that in dealing with the question of Gas Development Centres it was compelled to explore kindred matters which intimately concerned the three National bodies. While it was true that the Industry was assailed on all sides, it must be recognized that the solution of their difficulties must come from within the Industry.

The motion for the adoption of the Report and Accounts was then put to the meeting and carried unanimously.

## Election of Office-Bearers.

Sir H. W. RUSSELL BENCRAFT, proposing the re-election of Sir David Milne-Watson as President, said it would be impertinent on his part to speak of the great ability of Sir David Milne-Watson, and he would, therefore, content himself by saying that it would be impossible to find a more able leader. Incidentally, he commented that it had struck him that whenever there was a job going a Scotsman always "popped up." [Laughter.] It was only necessary to mention in this connection the Archbishop of Canterbury and the Prime Minister, while in the Gas Industry a new organization had been formed this year, and a Scotsman was immediately elected President. On the present occasion they were proposing to elect another Scotsman in the person of Sir David Milne-Watson as President of the National Gas Council, while another—namely, Councillor Walter Muter, of Edinburgh, was President of the British Commercial Gas Association. No doubt the obvious retort of Councillor Muter when he seconded the proposal for the re-election of Sir David Milne-Watson would be that Scotsmen were the most capable people, but, however that might be, the National Gas Council was fortunate in having the services of Sir David Milne-Watson, in view of the enormous amount of work he had to do in connection with the various organizations with which he was concerned.

Councillor WALTER MUTER, seconding the proposal for the re-election of Sir David Milne-Watson as President, suggested in reply to what Sir Russell Bencraft had said, that many of his Southern friends overlooked the fact that Scotsmen as a body were content to render the country as a whole a remarkable amount of honorary service. [Laughter.] In the very short connection he had had, as a mere layman, with the Gas Industry, however, he had been struck with the great responsibilities resting upon the shoulders of the President of the National Gas Council. There was no question but that an excellent choice had been made, and they could not do better than carry on the work of the National Gas Council in all its ramifications and its great responsibilities under the leadership of a very distinguished Britisher—[laughter]—in the person of Sir David Milne-Watson.

The proposal was carried with hearty acclamation.

Ths PRESIDENT expressed his sincere thanks for the honour that had been done him by entrusting him once more with the Presidency of the National Gas Council which did important and arduous work. He hoped he would not be one of those who shirked that work, and it was in that spirit, and in appreciation of having been honoured for so many years in being elected President, that he gratefully accepted once more his election to that office, and hoped he would be spared to continue to fill the position to the satisfaction of the Industry.

## Re-Election of Officers.

On the proposition of Lieut.-Col. H. W. WOODALL, seconded by Alderman W. J. CROOKES (Doncaster), the following officers were unanimously re-elected:

*Hon. Treasurer.*—Alderman Sir William Kay.
*Trustees.*—Alderman John E. Daw, Alderman J. H. Lloyd.
*Hon Secretaries.*—Sir Francis Goodenough, Mr. W. E. Price.
*Auditor.*—Mr. A. Morland.

The PRESIDENT, moving a vote of thanks to the Chairmen and Secretaries of the District Executive Boards, emphasized how these Boards were really the basis upon which the National Gas Council was founded. Those who knew anything about the constitution of the Council and its work knew that all matters of supreme importance to the Industry were referred to the Districts for their opinions, which were given in an absolutely untrammelled manner, and these opinions were discussed by the Central Executive Board. It was in this way that it was possible to keep in touch with the Districts and to make the National Gas Council a truly "National" body. Without that they would not be in a position to speak for the Industry with authority in Parliament and elsewhere. All this, however, involved a great deal of self-effacing work which perhaps was very little recognized. It was, moreover, regarded as a work of love by the members of the various Committees, but it was appreciated at headquarters that a great debt of gratitude was owing to the Chairmen and Secretaries of the District Executive Boards for their work.

Councillor G. H. KITSON, who seconded the vote of thanks, said he was glad to have the opportunity of adding a word of appreciation of what was done by the Chairmen and Secretaries of the District Executive Boards, and he regarded the existence of these Boards as an admirable arrangement, because it resulted in opinions coming forward which were really needed by the Council. Moreover, the Council desired these opinions to be expressed as forcibly as possible, and although the work of the Boards might be carried on in such a way that it was not always recognized outside, it was undoubtedly work of the greatest importance to the Industry as a whole.

The vote of thanks was carried with acclamation.

Mr. F. PRENTICE, replying on behalf of the Chairmen, said he knew he was voicing the opinion of all the District Chairmen when he said that it was the greatest possible pleasure to them to be able to do this work for the Industry.

Mr. G. DIXON, replying on behalf of the District Secretaries, said that while it would be idle to deny that the work being done by the District Boards was extremely arduous,

nevertheless those concerned with the Boards gave their services willingly in the feeling that they constituted a contribution for the benefit of the Industry. At the same time, on behalf of the District Secretaries, he expressed appreciation for the help they always received from the staff under Col. S. S. Ogilvie, Mr. E. J. Fottrell, and Mr. W. J. Smith, and knowing how willingly that help was given he could only hope that in the future the duties falling upon the District Boards would be even more arduous, because it would be an indication of further activity in the Industry.

The PRESIDENT, proposing a vote of thanks to the Finance and other Committees of the Council, remarked that several members of the Gas Industry were almost breaking down under the strain of the work involved on innumerable Committees, and that the Council was doing its best to find a way out of the difficulty. Many of the members of the Committee were constantly travelling to and from London on work concerned with the Industry, and the strain was considerable. At the moment, however, they could do nothing less than to thank them most cordially for the work they did.

Mr. F. ELIOT WILLIAMS, seconding the vote of thanks, also emphasized the point that it was very often not realized how much work was done on Committees in such an organization as the National Gas Council for the simple reason that such work did not get publicity.

The vote of thanks was carried with acclamation.

Sir FRANCIS GOODENOUGH, who acknowledged the vote of thanks, said he could speak from personal knowledge of the whole-hearted manner in which the members of the various Committees carried out their work and they all found great pleasure in doing it for the Industry of which they were all so proud.

The PRESIDENT, proposing the final vote of thanks to the staff, remarked that although a great deal was done by the Committees it was inevitable that the bulk of the work had to be done by the officers in London, and as he had said on previous occasions, he did not believe that any Association had better officers and staff. They worked with the greatest possible enthusiasm, and he was quite sure that they were extremely popular in the Industry. It was impossible to differentiate between them because each in their own sphere gave yeoman service, together with the members of their staff, and it was to be hoped that they would all be given health and strength to continue to carry out their work.

Col. OGILVIE acknowledged the vote of thanks on behalf of Mr. Fottrell, Mr. Smith, the staff, and himself.

This closed the business of the Annual General Meeting.

### Special General Meeting.

A Special General Meeting followed, for the purpose of modifying the Constitution and Rules of the Council, following on the adoption of the staff superannuation scheme, the President explaining that the proposals to be put before the Meeting were necessary in order to regularize the position.

The following resolution was then read by the Secretary:

That the Constitution and Rules of the Council be amended and altered as follows:—viz.:

(*a*) By adding to Rule III. the following paragraph:

9. (*a*) To establish and support or aid in the establishment and support of Associations, Institutions, Funds, Trusts, and Conveniences calculated to benefit employees or ex-employees of the Council or the dependants or connections of such persons; and to grant pensions and allowances, and to make payments towards insurances, and to subscribe or guarantee money for charitable or benevolent objects or for any Exhibition or Institution or for any public, general, or useful object.

(*b*) By adding to Rule VI. the following paragraph:

12. The Central Executive Board may grant pensions or allowances to or make arrangements by way of insurance or otherwise for the superannuation of any officer or servant of the Council.

The PRESIDENT, moving the adoption of this resolution, remarked that although there might be the criticism that the proposals were wide in their scope, the Council at the same time had complete control of what might be done, and therefore he did not think anybody need object to these powers.

Alderman JOHN E. DAW, seconding the motion, said that actually the alterations proposed were not absolutely necessary, but after the solicitors had been consulted it was though desirable, even if the existing Rules gave the Council powers to do what was suggested, that the Council should have specific powers. All the legal formalities with regard to the scheme had not yet been completed, but immediately the principle was approved the 5% had been deducted from the salaries of the staff and the Council had made its contribution as provided for under the scheme. In a very short time the scheme would be in complete working order.

On the proposition of Mr. WILLIAM CASH, seconded by Alderman J. E. DAW, it was resolved that the following words be inserted at the end of paragraph 9 (*a*)

" which may be considered to be for the benefit of the Gas Industry."

With this addition the amendments to the Rules as set out in the resolution were unanimously approved and adopted.

Mr. W. J. SMITH (Secretary), on behalf of the staff, expressed appreciation at the passing of this resolution.

The Meeting then closed with thanks to Sir David for presiding.

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## Western Junior Gas Association

### Annual Meeting

Members assembled at the Burnham-on-Sea Gas-Works of the Weston-super-Mare and District Gas Company on May 18. A tour of inspection of the manufacturing plant was made, special interest being taken in the Moore Gas Generator. This plant was described in the " JOURNAL " for Nov. 22, 1933.

The annual business meeting followed the Works visit, the chair being taken by Mr. D. L. COPP (President), of Exeter.

An especial welcome was given to Mr. E. L. Nicholas, Engineer and Manager to the Guildford Gas Company, who was present as President of the Southern Association of Gas Engineers and Managers, also to Mr. James Taylor, Engineer and Manager of the Weston-super-Mare Company.

The following are the new or re-elected Officers for the Session 1935-36:

*President.*—Mr. J. H. Dyde, Plymouth and Stonehouse.

*Senior Vice-President.*—Mr. S. B. Jones, Clevedon.

*Junior Vice-President.*—Mr. J. E. Akroyd, Swindon G.W.R.

*Hon. Secretary.*—Mr. K. L. Clark, Weston-super-Mare.

*Hon. Treasurer.*—Mr. B. F. Harris, Trowbridge.

*Council.*—Mr. A. Marsden, Bristol, and Mr. J. Kay, Bath.

*Hon. Auditors.*—Mr. John F. Marlow, Weston-super-Mare, and Mr. H. Randall, Stroud.

The reports of the Secretary and Treasurer having been previously circulated were taken as read and formally adopted.

Both these Officers and the Auditors were thanked for their services to the Association.

### Summer Meeting.

A letter was read from Mr. John T. Joyce, Engineer and Manager of the Weymouth Consumers' Gas Company in which he invited the Association to hold their Summer Meeting at Weymouth, when his Company would act as hosts. The date suggested was July 6. The invitation was unanimously accepted with the best thanks of the Association.

A resolution of congratulations was passed to Mr. H. D. Sullivan, of Plymouth, that his Paper given to the Association had been awarded The Institution of Gas Engineers' Bronze Medal for 1934. This Paper also received the Society of British Gas Industries' Silver Medal for Papers given to the Association during 1934.

Then followed tea by invitation of the Chairman and Directors of the Weston-super-Mare Gas Company. The thanks of the Association were expressed by Mr. J. H. DYDE supported by Mr. A. TRAN, to which Mr. JAMES TAYLOR suitably replied.

Immediately following tea, the President, Mr. D. L. Copp, gave his Presidential Address, which will be published in a later issue of the " JOURNAL."

A vote of thanks to the President for his Address was proposed by Mr. S. B. JONES (Clevedon), seconded by Mr. J. E. AKROYD (Swindon G.W.R.) and supported by Mr. E. L. NICHOLAS.

# The Society of British Gas Industries

Annual Meeting and Dinner, May 15, 1935

The Annual Meeting of the Society of British Gas Industries was held at the Hotel Metropole, London, on Wednesday, May 15, under the Presidency of Sir JOHN CADMAN, G.C.M.G., D.Sc.

The minutes of the last Annual Meeting having been confirmed and signed, the Council's Report for 1934-35 was presented by Mr. Douglas W. Turner, Chairman of the Council.

## Report of the Council for 1934-35.

The Council begs to present to the Members its Thirtieth Annual Report on the work of the Society.

*President.*—It is with the greatest pleasure that the Council are able to announce that they have obtained the consent of Sir John Cadman to serve as President of the Society for a second term of office.

*Secretaryship.*—After thirty years' service as Secretary of the Society, Mr. Arthur L. Griffith relinquished his position on March 1. His assiduous interest in the affairs of the Society and his unfailing courtesy at all times have in no small degree promoted its success, and have at the same time endeared him to all with whom he has come into contact. Mr. Griffith carries with him the Society's grateful thanks for his services and its best wishes on his well-earned retirement.

The Society has been fortunate in securing the services of Mr. M. W. Burt as Manager and Secretary. Since 1928 Mr. Burt has been Secretary of the British Road Tar Association and has, therefore, already obtained valuable experience in the Gas Industry. After the war, he was appointed by the Secretary of State for Foreign Affairs to the Consular Service (Special Branch), but was prevented from taking up his appointment due to injuries received while in the Army. Subsequently he joined the British Electrical and Allied Manufacturers' Association, and during his six years with that body gained valuable knowledge of trade association working. He was also the first Secretary of the World Power Conference and has been associated with the organization of several important international conferences in this and other countries.

The Council is confident that members will give Mr. Burt every encouragement and support.

*British Gas Federation.*—The year under review has witnessed in the formation of the British Gas Federation one of the most important steps taken in the history of the Gas Industry.

The Federation is composed of the National Gas Council, the British Commercial Gas Association, The Institution of Gas Engineers, the Society of British Gas Industries, and the Gas Companies' Protection Association. The Federation, without interfering with the individual activities of the organizations of which it is composed, will co-ordinate the efforts of the constituent members in the formulation of a common policy for furthering the interests of the Gas Industry as a whole, and for the first time the Industry will be able to speak with one voice on all national problems. Meetings are being held from time to time, and the activities of the Federation are proceeding satisfactorily.

The inaugural dinner was held in London in November, at which the first President, Lord Macmillan, presided. It is the desire of the Society to co-operate to the fullest extent possible in the activities of the Federation.

*Exhibitions.*—One of the first acts of the British Gas Federation has been to set up an Exhibition Committee, of which the Chairman of the Council has been elected Vice-Chairman and on which the Society is strongly represented.

The Society's members are called upon to support a large number of Exhibitions, and it is hoped that the concentration of effort, which should be secured by the activities of this Committee, will be to the advantage both of the Society's members and of the Industry as a whole.

*Research.*—Further evidence of the desire to secure closer co-operation between all branches of the Industry has been afforded by the invitation of the Institution of Gas Engineers to the Society, which has been gladly accepted, to nominate three representatives to serve on the Advisory Committee on Research.

*Junior Gas Associations—Award of Silver Medals.*—The Council, as in previous years, have awarded Silver Medals to each of the Junior Gas Associations for the best paper adjudged to have been presented during the year by their members at a General Meeting. The interest aroused by these awards is best illustrated by the fact that this year 23 papers from 6 Associations were submitted for adjudication.

*City and Guilds of London Institute.*—The prizes in the City and Guilds of London Institute Examinations in Gas-Works Practice, Gas Supply Practice, and Gas Fitting have been duly awarded and announced in the Technical Press. The Council are glad to be able to offer this encouragement to the young men of the Industry.

*Amalgamation Union of Building Trade Workers.*—Discussions have taken place during the year between the Society's members of Section I., the Federation of Gas Employers, and the Amalgamated Union of Building Trade Workers, with regard to the hours of work of bricklayers employed as retort setters.

Certain differences of interpretation of the existing agreement were found to exist, and the object of the discussions was to secure uniformity of practice. It is, therefore, gratifying to be able to state that recent reports from the Society's members reveal that good progress has been made in the desired direction.

*French Import Quotas.*—The issue of Quota Certificates in respect of certain gas apparatus for importation into France, in accordance with the regulations of the French Government, is still being conducted by the Society. It is gratifying to the Council to be able to render this Service to exporters, and the Society is indebted to the Board of Trade and the Federation of British Industries, for their assistance in connection with various difficulties which have arisen in administering the Quota.

*Refractories.*—The formulation of standard specifications follows the progress of research. The Institution of Gas Engineers introduced recognized Standard Specifications for Firebricks in 1912. As the result of experience, modifications were suggested and revisions made in 1922 and 1925. Beyond doubt the application of these standard tests resulted, among other things, in a great improvement in the texture of firebricks, and gave an impetus to the fuller appreciation of the constitution and peculiar properties of silica products.

The Refractory Materials Joint Sub-Committee of The Institution of Gas Engineers, the British Refractories Research Association, and the Society have now reconsidered the specifications in the light of recent investigations and an increased knowledge of the properties of refractory materials. The results of these deliberations have been embodied in a completely revised edition of "Standard Specifications for Refractory Materials for Gas-Works," which is now published.

The British Refractories Research Association, in the well-being of which the Society has taken great interest, is doing valuable work to the benefit of the Gas Industry and the refractories industry generally.

*Repair of Gasholders.*—Agreement has been reached between the Home Office, The Institution of Gas Engineers, and the Society for the issue of "Voluntary Rules to be observed in the Repair of Water-sealed Gasholders."

*Silver Jubilee Celebrations.*—The Lighting Section of the Society is co-operating with the Joint Co-ordinating Committee in connection with the floodlighting of historical and important buildings and parks on the occasion of Their Majesties' Silver Jubilee Celebrations.

*Institution of Gas Engineers—Joint Lighting Committee.*—A Sub-Committee of the Joint Lighting Committee has been appointed to draft evidence for submission on behalf of the Gas Industry to the Department Committee on Street Lighting, which was appointed by the Minister of Transport, with the following terms of reference:

> "To examine and report what steps could be taken for securing more efficient and uniform street lighting, with particular reference to the convenience and safety of traffic and with due regard to the requirements of residential and shopping areas, and to make recommendations."

The Joint Lighting Committee has considered many problems relating to lighting, and receives reports from and secures representation on the national organizations dealing with illumination.

*British Standards Institution.*—The Society is co-operating with The Institution and is represented on the following Committees, Sub-Committees, and Panels:

Gas Industry Committee.
Gas Industry Advisory Panel.
Flexible Metallic Tubing and Connections Sub-Committee.
Gas Industry Terms Committee.
Gas Industry Terms Editing Committee.
Methods for the Evaluation of Efficiency and Performance of Plant in which Gas is used (Technical Committee).
Standardization of Flue Pipes and Fittings (Technical Committee).
Illumination Industry Committee.
Lighting Fittings (Technical Committee).
Neck Dimensions Sub-Committee.
Diffusing Materials Sub-Committee.
Street Lighting (Technical Committee).
Hydro-Extractors Committee.
Fans (Technical Committee).

*Special Fund.*—The Council is gratified at the increased

support of this Fund and hopes all members will see their way to become regular subscribers.

*Membership.*—The membership of the Society is steadily increasing, eight new firms having joined the Society during the period under review. The entrance fee is waived at the present time, but the Council may have to re-consider this in the near future. It is hoped that all members will do their best to introduce new members and thus strengthen the Society. The membership consists at present of 145 firms.

The Council has to record with great regret the death of the Rt. Hon. Lord Riddell, a very distinguished Past-President of the Society, and of the following principals of member-firms:

George H. Braddock, J.P., Chairman, J. & J. Braddock.
F. H. Lamb, Director and Secretary, Donald Macpherson & Co., Ltd.
D. R. Myers, Partner, E. Foster & Co.
Sir Harris Spencer, K.B.E., Chairman, John Spencer, Ltd.

The Society is much indebted to its Immediate Past-President, Earl Fitzwilliam, for the very able and valuable address he presented at the Annual Meeting in May.

The Society desires to place on record its cordial thanks to Mr. Douglas W. Turner, Chairman of the Council, for his very interesting address, "Thoughts on the Necessity for Organized Trading," at the Autumn Meeting in November.

*General.*—The primary object of the Society is essentially to promote by voluntary co-operative action the interests of those engaged as Contractors and Manufacturers in the Gas Industry. Co-operation without the sacrifice of individual initiative has been the fundamental principle behind all the Society's activities.

The Society is, however, fully conscious that the well-being of its constituent members is synonymous with the well-being of the great Industry which it serves. It is proud of the contribution which its members have made in the past to the development of the Industry, and in the assurance of a growing recognition of the value of the services of a highly efficient and widely experienced personnel and of a creative technique in manufacturing methods and design, based upon continuous development work and research, it looks forward to rendering an even wider and more valuable service in the future.

The Society has a unique opportunity at the present time to exercise its influence on behalf of the contractors and manufacturers in a way that has never previously been possible, and in this connection the following extract from the Technical Press of March 27 last ("GAS JOURNAL"—page 746) is of particular interest:

> "As we pointed out not long ago, this new spirit of co-operation gives to the plant and appliance makers the chance of a lifetime, and if they do not seize it with welcoming hands they will be doing an injustice not only to themselves, but to the Industry of which they form such an important part. 'Important' is by no means too strong a term in which to describe their position, though perhaps with becoming modesty they remind us seldom enough of what the Industry owes them in its rise to its present position—in their research work past and present, in the very highly skilled technical staffs they maintain, through thick and thin, always at the service of everybody, and, perhaps not least of all in the healthy rivalry among themselves which they have never abandoned, and which does so much to ensure a square deal for the individual gas undertaking.
>
> "The manufacturers have, indeed, stood for progress from the beginning of all things, and we believe, on the whole, when the gas engineer pauses to think he gives them full credit for it. Certain it is that their knowledge and experience, and their willing co-operation, have at one time or another been invaluable to almost every gas undertaking in the land, of whatever size.
>
> "When, therefore, Mr. Douglas W. Turner, as Chairman of Council of the S.B.G.I., says at Birmingham that the work of the Society has not always been fully appreciated, and that there has been a tendency for it to occupy rather a secondary position in the Industry, we are inclined to hold the Society itself not altogether blameless in the matter. This means, of course, that we attach responsibility firstly to those who are its constituent members, among whom there have been some who openly confess to half-heartedness about their national body. We imagine they can be in no doubt—less than ever so at the present juncture—as to the advantages of having a strong organization of adequate prestige to represent their collective views, and, in the interests of the Industry, which we all serve, we hope that constructive criticism in the proper quarter will take the place of lukewarm aloofness where such has existed. We do also sincerely commend to those who have hitherto stood outside the national body to give the question renewed consideration. They, doubtless, have their reasons of which we are not aware, but in our view the same argument holds—that an association representing as near 100% as possible of their side of the Industry should be a fully recognized and integral part of the whole, and that it is up to them to make it so."

We commend this to the careful consideration of all members.

On behalf of the Council,
DOUGLAS W. TURNER,
Chairman.

*April* 11, 1935.

Mr. DOUGLAS W. TURNER said that he would, in presenting this Report, lay special emphasis on the extract which had been re-printed from the Technical Press. He formally moved the adoption of the Report.

Mr. D. M. HENSHAW, in seconding the adoption of the Report, remarked that it represented a considerable amount of activity which had taken place during the year. Those on the Council who had co-operated with Mr. Turner felt they owed a great debt of gratitude to him for carrying out this work—which had been in every way in the interests of the Society as a whole.

The resolution for the adoption of the Report was then put to the meeting and carried unanimously.

## The Accounts.

The HON. TREASURER (Dr. E. W. Smith), in proposing the adoption of the accounts for the past year, remarked that the statement had been circulated to all members, who had had ample time to look through the details. It might, however, be of interest if he drew members' attention to one or two points which differed slightly from the corresponding figures in the previous accounts. It would be noted that the effect of the increased membership had been to increase the income; and that they had had an income during the year from the Chemical Engineering Congress for the part rental of the Society's rooms. They would also note that there was a credit balance on the year of £124 as against a debit last year of some £2. The balance-sheet had been examined by their Auditors, whose certificate would be seen below. In the Special Fund the total income was £2,715, which had been expended as was explained there, while they had subscribed the usual £2,000 to the British Commercial Gas Association, together with an item in advance of £500.

Mr. F. J. GOULD seconded the resolution for the adoption of the accounts, which was carried unanimously.

## Elections to Council.

The SECRETARY AND MANAGER (Mr. M. W. Burt) then announced the following elections to the Council as representatives of the various sections:

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|---|---|
| Mr. Ernest West | Section I. |
| Mr. Leonard Hartley | ,, II. |
| Mr. Richard Miles | ,, III. |
| Mr. W. H. Handley | ,, IV. |
| Mr. C. G. Langford | ,, V. |
| Mr. R. J. Rogers | ,, VI. |
| Mr. Philip H. Sugg | ,, VII. |
| Mr. George Ewart | ,, VIII. |
| Mr. A. B. Balmford | ,, IX. |
| Col. Alan Stein, M.C. | ,, X. |
| Alderman George Clark, J.P. | ,, XI. |
| Mr. T. Alborn Clapham | ,, XII. |
| Mr. B. B. Waller | ,, XIII. |
| Mr. A. J. B. Atkinson | ,, XIV. |
| Col. O. B. F. Planck | ,, XV. |

## The New Chairman.

Mr. E. J. FOX moved the election of Mr. D. M. Henshaw as Chairman, and Mr. F. B. Richards as Vice-Chairman, of the Council, remarking that everyone on the Council felt that they were very fortunate in having been able to persuade Mr. Henshaw to follow Mr. Turner as Chairman. Mr. Turner, as they all knew, had eclipsed himself with flying colours, and they could not pretend that Mr. Henshaw would have an easy task in following him. They were also very pleased that Mr. Richards had been able to come back into the Society.

Mr. H. M. THORNTON, in seconding the proposition, said that, as a member of the Council, he knew the good work already done by Mr. Henshaw as Vice-Chairman, and they were very fortunate in obtaining his services. Mr. Richards was a very old friend of many of them, and they recognized his value in the business world. They were sure he would bring all his business ability to the benefit of the Society.

The resolution was carried unanimously, and Mr. HENSHAW briefly acknowledged the elections on behalf of himself and Mr. Richards, observing that the latter was unable to be there on that occasion as he was in America on an important business mission. They were sorry, he added, that Mr. Turner could not continue his good work as Chairman but were glad that he was going to remain on the Council *ex-officio*.

## Re-election of Officers and Council.

On the proposition of Mr. F. C. TILLEY, seconded by Mr. B. B. WALLER, the following Officers and elective members of the Council were re-appointed:

*Hon. Treasurer.*—Dr. E. W. Smith.
*Hon. Secretary.*—Mr. F. J. Gould.
*Elective Members.*—Messrs. E. J. Fox, E. J. Davison, H. E. Bennet, and H. M. Thornton,

while the following new elective members were appointed—namely, Mr. D. W. Turner and Mr. T. Allen.

The Society's Auditors (Messrs. Cash, Stone, & Co.) were re-appointed on the proposition of Mr. H. E. BENNET, seconded by Mr. E. J. DAVISON.

Mr. C. CLARE thereafter moved a hearty vote of thanks to the Council and Officers for their work during the past year. As he had been the first Chairman of their Society, for four years, he could testify to the considerable advance there had been in the duties of the Council, and, if he might say so, they had carried them out extraordinarily well. It was so different to what it was thirty years ago, when "a bundle of sticks" was all they had to show as their efforts during the previous year. The Report they had to-day was very different and augured for greater advances still in the future. The amalgamation of the four main national bodies of the Gas Industry into the British Gas Federation was a remarkable development. The work of the Council and Officers represented no sinecure, and it was work that was always done well. He was sure that the whole Society owed them a debt of gratitude.

Mr. A. B. POTTERTON seconded the vote of thanks, which was carried with enthusiasm.

Mr. D. W. TURNER, in acknowledging the vote on behalf of the Council and Officers, thanked them very much, remarking that the Officers had had a particularly strenuous time during the past twelve months. They could imagine what a change in the Secretaryship had meant—with a small staff such as they had—to both their retiring and their incoming Secretary. The formation of the British Gas Federation and other matters had put a tremendous strain on their Officers and staff. As regards the Council, Mr. Turner said he would like to express, in addition to what had been said by the proposer of the resolution, his own debt of gratitude to the members of the Council. He could not possibly have carried out the work of Chairman without the very valuable help he had received from them, while it had been of the greatest assistance to him to have the ready response in connection with any help they had needed, especially from those members who were resident in London.

## Presentation to Mr. Arthur L. Griffith.

Continuing, Mr. Turner said that the duty he had now to perform was a very pleasant one—and also a rather sad one. They had already seen from the Report that Mr. A. L. Griffith was relinquishing his position as Secretary of the Society on March 1. The Society of British Gas Industries was formed in 1906, at which time it consisted of, he believed, about 36 firms. The first meeting was held—strangely enough as regards the day—on March 1, 1906, and Mr. Griffith was then appointed Permanent Secretary of the Society. It was therefore true to say that Mr. Griffith's career with the Society coincided almost entirely with the growth and development of the Society itself. They were all fully aware during the years which had passed of the growth of the Society, of its work and dimensions and its importance as compared with 1906. They were also aware that any organization was dependent upon its staff and personnel; and in an organization such as theirs, whose personnel and staff was very limited in number—in fact, the personnel of the permanent staff consisted almost 100% in the Secretary—its success or otherwise was dependent upon the success or otherwise and the effectiveness of its Secretary. They owed a great debt of gratitude to Mr. Griffith for all he had done. He had expressed a desire to retire some time ago, but had been good enough to consent to remain with them until they could obtain a successor of the type they required. So Mr. Griffith had very kindly stayed with them until they found Mr. Burt.

Several members had suggested to him, continued Mr. Turner, that they would like to pay a personal tribute to the work Mr. Griffith had done for the Society. He therefore wrote to all the members suggesting that they might like to do this, and as a result he received replies from 110 members and donations amounting to £165. He was sure it needed no further words of his on this subject, and he was now going to ask their President to present a cheque to Mr. Griffith as a token of their respect and esteem.

The PRESIDENT, in doing so, remarked that the first act he had to perform as their President was a very pleasant one—to hand over this cheque, as the unanimous wish of the members, to show their appreciation of the services which had been rendered by the Secretary during a very strenuous and difficult period.

Mr. A. L. GRIFFITH thanked the Chairman very much for the kind remarks he had made and all the members for this tangible recognition of his services. He had been with the Society from its beginning, and he hoped that he had handed it over in a worthy condition to his successor, with his best wishes for its future prosperity. He was very pleased that the British Gas Federation had been formed before his retirement, for the Society of British Gas Industries had always done its best to co-operate with the other bodies in the Industry for the good of the Industry.

## Presentation of Medals to Juniors.

The PRESIDENT made the presentation of the Society's Silver Medals to the authors of the best Papers adjudged to have been read during the last session by members of Junior Gas Associations The recipients were as follows:

**Manchester and District Junior Gas Association.**

T. HIBBS . . . . . May 9, 1934
"The Design and Construction of Complete New Works at Mossley."

**Wales and Monmouthshire Junior Gas Association.**

F. ROBERTSON . . . . . Jan. 20, 1934
"Some practical observations on Installing Domestic Gas Water Heaters."

**Western Junior Gas Association.**

H. D. SULLIVAN . . . . . Dec. 1, 1934
"Economic Considerations of Gas-Fired Central Heating."

**Midland Junior Gas Association.**

F. H. BATE and A. R. MYHILL . . . . April 12, 1934
"Factors influencing Carbonizing Results in Vertical Retort Practice: Some Recent Experiments at Birmingham."

**Yorkshire Junior Gas Association.**

A. H. CLUCAS . . . . . Nov. 17, 1934
"Leakage in Horizontal Gas Retorts."

**London and Southern District Junior Gas Association.**

T. G. NOBLE . . . . . Nov. 23, 1934
"The Design of Gas-Fired Water Heaters, with special reference to heat transfer."

## Presidential Address.

The PRESIDENT thereafter delivered his Presidential Address, which, entitled "The Future of Gas," was published in full in last week's issue of the "JOURNAL"—(p. 370).

Mr. D. W. TURNER, in moving a hearty vote of thanks to Sir John Cadman for his Address, said that he would first like on their behalf to say how pleased they were to see him with them on that occasion, safely returned from his important work recently completed in the East. He was not, unfortunately, able to be present at their Half-Yearly Meeting, and therefore they were particularly pleased to see him with them that day. He thought that they would have a very interesting Address, and he was sure they would agree that they had not been disappointed.

As a mere layman in these matters, he was not going to attempt to express any opinions of a technical nature on the Address, because Dr. Smith, who was seconding this resolution, was far more able to speak in that direction than he was. He was exceedingly pleased to know these facts from so high an authority as their President, and as Sir John Cadman had read his Address there were several points which appealed to him—among these, his suggestion that " . . . the industrial use of gas represents only a small percentage of what it should be;" that " . . . the future of gas lies in a wide expansion of its use as a heating agent for both industrial and domestic purposes;" that one great result of a national gas grid "will be cheaper gas;" and that "if coal needs increased outlets—as it undoubtedly does—the best medium to secure those outlets lies in a very greatly increased national consumption of gas." Therefore, as a layman, said Mr. Turner, it was exceedingly pleasing to hear these statements from such an authority as Sir John Cadman. They often wondered why the Gas Industry could not take advantage of larger loads and cheaper prices, and why legislation did not enable them to offer different prices to different customers and so obtain these additional loads. When that suggestion came from such an authority it was very encouraging to the Gas Industry. He had also stated that the Industry was passing through a very important phase at the present time. Decisions in regard to its future were therefore important, and his Address would give much food for thought and would help them in making those decisions. In conclusion, Mr. Turner suggested that this Address was like that of a chairman at a successful shareholders' meeting—there were not a great many there to hear it, but it went out into the world through the medium of the Press and was read with very great interest by all concerned.

Dr. E. W SMITH, in seconding the vote of thanks, said he had not the slightest doubt that the unthinking man-in-the-street would be astounded that one who was at the head of what he might regard as a competitive industry had found it possible to put forward a Paper of this kind. But those who knew Sir John Cadman better would realize that in their President they had one of the broadest-minded of men—one who in earlier years had been a mining engineer, then a Professor of Mining in Birmingham, and subsequently became the head of the Anglo-Persian Oil Company. It was therefore inevitable that he should have a broad view on all fuel questions; and his main interest

was to see that the Nation's fuel problems were tackled properly.

Their President would be glad to know—if he did not know it already—that the changes which were taking place in the Gas Industry at the present time were greater in extent and importance than at any other time in the history of the Industry. The way in which the Industry was getting together might seem slow to some people. It must be admitted, when all the complex circumstances were known, that it was not an easy matter, but if the spirit was right and the will was there, anything could be accomplished. After all the Industry had been going over one hundred years, but this must not be used as an argument that consequently another hundred years could go before anything should be done.

As regards the formation of the British Gas Federation, this was a very important step forward. The Contractors were now admitted to the inner councils of the Industry. In the past they had often been treated as a lower order. He wondered whether in their admission to the Federation it could be taken that in their deliberations they would be given that complete equality which was essential to the success of the Federation. He himself felt that if there were any indication of the old attitude, he would not be prepared to continue as one of their representatives.

### Gas and Coal not Competitors.

Another way in which their President might help them very materially would be by endeavouring to get the coal industry to realize that the Gas Industry was not a competitor, and that to set up separate organizations as regards publicity and research and raise separate funds for these purposes could only have for their main effect a slight improvement of antiquated methods rather than putting their backs wholeheartedly into coal processing and the production of a fuel which could be made cheaper if there were greater collaboration between the two industries. The President had asked for a national plan for the Gas Industry. Dr. Smith said that he believed he could say that the germs of such a plan were in existence to-day; there was a Committee considering a possible plan for the development of the Industry on national lines. It was a simple matter to formulate a plan for some new industry, but it was very different in a case like theirs. If it were left to the Industry it could be done well. But if it were imposed upon them there would be something to regret.

Continuing, Dr. Smith remarked that he knew of a case in which two firms of furnace manufacturers had been given the opportunity of trying to demonstrate that gas was cheaper for heating in a certain process than oil. They failed. But a third firm came along, and by looking at the matter slightly differently, and by putting forward a better design of equipment, they succeeded in obtaining the whole load—which meant that in twelve months' time a certain gas undertaking would have to make provision for doubling its output. Too much stress was laid upon how cheaply gas could be supplied for industrial purposes. Improved designs ensured higher efficiencies, and the cost to the consumer was reduced without the gas being sold to him at an unnecessarily reduced price; then the gas undertaking would get most of the saving.

In conclusion, Dr. Smith said that he wished to thank Sir John Cadman personally—as an old friend with whom he was associated many years ago in Birmingham in connection with life saving equipment—for the privilege he had afforded their Society in accepting the Presidency this year, and for the fact that he was going to be their President again next year.

The PRESIDENT, in reply, said that he had set to work in preparing his Address with a certain amount of trepidation because he knew he was bound to offend the susceptibilities of some by attempting to peep into the future. But he was more than gratified by the way they had received it. The subject was one which naturally bristled with difficulties and interest. It was idle to think that the coal industry could progress on the maxim he learnt of "sell lumps of coal." They were in an era when efficiency was going to be the mark of industry, and when the general outlook was very different from what it was in the past; the country had got to work as a team with the definite object of carrying on research to which energy was related. He was perfectly satisfied that the day was dawning when the people of this country would rise to the heritage which had been handed down to them—and it might not be long. They might have a good position in the Gas Industry, but it was not strong enough. They had the opportunity of bringing the Industry into a united condition; he was satisfied that they were on the right lines and he wished them every success.

### The President Re-elected.

Mr. D. M. HENSHAW moved that Sir John Cadman be re-elected President of the Society for another year, which was seconded by Col. O. B. F. PLANCK and unanimously carried.

The PRESIDENT, in acknowledgment, said that he was very much obliged by the honour they had conferred upon him. He was stimulated by the almost galvanic possibilities of their Society and by the fact that they were moving in a direction which would give help and strength to the whole Industry.

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# The Annual Dinner

The Annual Dinner was held at the Hotel Metropole, London, on May 15. Sir JOHN CADMAN (President) was in the Chair, and there was a company of nearly 200, including representatives of all branches of the Industry. It had been arranged that the toast of "The Society of British Gas Industries" should be proposed by the Rt. Hon. Lord Tyrrell of Avon and replied to by the President, and the toast of "The Gas Industry" by Mr. Ernest Brown, M.P. (Secretary for Mines), the reply being given by Councillor W. Muter (President of the British Commercial Gas Association). Unfortunately neither Lord Tyrrell nor Mr. Muter was able to be present, and the two toasts were merged into one and were proposed by Mr. Ernest Brown, the reply being given by the President.

In proposing the Loyal Toast, the PRESIDENT said that having regard to the Jubilee and the fact that so many people had been seeing the King and Queen during the past few days, he proposed to depart from the usual custom and to propose "Their Majesties the King and Queen," and he asked that the toast should be honoured with even more than the usual enthusiasm and loyalty.

Mr. ERNEST BROWN (Secretary for Mines), proposing the Joint Toast of "the Society of British Gas Industries" and "the Gas Industry," said he was glad to be present because the Gas Industry provided one of the biggest demands of the coal industry. It was true that in certain directions gas competed with coal, but he did not take the view with regard to the fuel problem that it was necessary that one fuel should be altogether the enemy of the other. [Hear, hear.] The fact was that each fuel had its place and its function. Incidentally, Mr. Brown told the story of a man who had been to see the floodlighting in St. James' Park and had spoken of the wonderful results obtained with electricity! In the same way, there were even some Members of Parliament who had been under the same impression, until they had been told otherwise, that the very fine lighting of Whitehall was by electricity.

Continuing, he said he was extremely pleased to be present because in his official capacity it was his pleasing duty to have many relations with the Gas Industry as represented by its manufacturers, technicians, and engineers. At the present time the Industry provided direct employment for 115,000 persons, and it was a great satisfaction to know that the Joint Industrial Council in its relations with the employees in the Industry was a model to many other industries. The Gas Industry provided a market for 17 million tons of coal a year, but it was perhaps significant of what was going on in the Gas Industry when he pointed out that, although during the past ten years the make of gas in this country had increased by 18%, the demand for coal had remained constant. It was apparent that the scientist and engineer, not to mention the chemist, had been at work, with the result that better value was being obtained from the coal. A great deal still remained to be done in the direction of increasing the demand for gas, and he was pleased to see the manner in which Mr. Therm was being brought to the notice of the public, all of which indicated that the Gas Industry was appreciating to an increasing extent that it was not only necessary to make a product, but to sell it. During the past 25 years there had been a great evolution in the methods of making and using gas, and one of the finest examples of the state of efficiency at which the Industry had now arrived was to be seen in the lighting of Whitehall and in the floodlighting in St. James' Park, and in the very remarkable lighting of St. Mary Abbotts, Kensington.

A great deal of the increase in the production of gas was due to the fact that coke oven gas was being supplied during the period in question. For instance, in 1928 the amount of coke oven gas supplied was 4,268 million cu.ft., whereas in 1933 this had increased to 16,827 million cu.ft. He had no figures, said Mr. Brown, giving the exact proportions of domestic and industrial use, but he understood that 15% was

probably the proportion for the latter, on the average. Nevertheless, it was interesting to see that in certain areas this proportion was growing rapidly. For instance, the last figures for Sheffield showed it to be 60%, Birmingham was 28%, Glasgow 10%, and Edinburgh 9%. The industrial demand for coke was nearly 8 million tons per annum, while coke was also used very largely for domestic purposes. It was also interesting to notice the Gas Industry participating in the new market for creosote. Such, said Mr. Brown, had been the progress of the Industry, and on behalf of the Government and himself he wished the various branches of the Industry increasing success in using their knowledge in applying the most efficient methods.

In coupling the Toast with the name of the President, Mr. Brown said that Sir John Cadman was a perfect illustration of the argument of many people that the Ministry of Mines should be enlarged. There were people who said that as oil and coal were under one roof, gas and electricity should be put under the same roof and the functions of the Department enlarged in that way. In any event, Sir John was an illustration of the man of affairs—the statesman of industry—who took the widest possible view of these problems of energy, which as a matter of fact were at the root of many of our industrial problems on the productive side at the present moment.

## A Collection of Industrial Effort.

The PRESIDENT, responding, said it was a privilege to do so as representing, if he might use the expression, a collection of industrial effort which had been working up to now in an almost individual manner. In a way they were rather proud of that individuality which had brought them to their present position. The great industries which were represented that evening had grown up, as Mr. Brown had said, from small beginnings in which all had tried to work as individuals, and there was very little movement in this country that had not had individual effort as a background. It was that which had made this country great. But the movement of the future would have to be one of a totally different order, and they would have to join together. In that connection, therefore, he congratulated the Gas Industry on the great effort it had made this year in the formation of the British Gas Federation with the object of bringing together all the component parts of the Industry, to enable them to work as one.

The Society of British Gas Industries, continued the President, had been in existence for something like 30 years and had had many difficulties to overcome, but he would repeat that the movement which was bringing together the units of industry in this country to try to manufacture as one instead of as a number of parts, was something which must be for the good of all and for the good of the country. [Hear, hear.]

The oil industry contained many elements which were even more difficult than those in the coal and gas industries. In other words, there were international difficulties which were really much more difficult to reconcile than difficulties which were national. The time was coming, he believed, when it would be no longer possible to separate the various fuels with which the public was now supplied. The idea of there being a complex with oil, coal, and gas was absurd, and, moreover, was scientifically impossible. It was only made to appear possible by the fact that those engaged in the different industries were not quick enough in the up-take to realise that they had a function to perform, that function being to supply the great mass of people with the products most suited for their requirements. When that state of affairs was realized there would be, in his judgment, ample room for all the component parts of these various industries, whether it be gas, coal, or oil. The progress that was being made in bringing the various units of the Gas Industry into closer working co-operation was but a tiny indication of what the future would bring about, and he believed that many of those present would see a vast change in the general relations of the fuel industries to the consuming public. When they got away from the fact that they were competing and cutting each other's throats and trying to sell their products one against the other—and it would probably take quite a long time—he was convinced it would be found that the essential fuels would be relegated to their particular special uses and there would not be that great surplus which was being thrown out unwanted to-day. If the Gas Industry would unite in deciding upon what it wanted, and co-operate to reach its aim, it must succeed. Sooner or later the fuel problem would have to be considered as a whole, and if the Gas Industry was wise and well advised—and he believed it was—it would debate its place in a national plan before the best places had been occupied by others. It was to be hoped that the day might not be far off when Mr. Brown found himself at the head of a Ministry which embraced the whole fuel aspect of this country.

## "Our Guests."

Dr. E. W. SMITH (Hon. Treasurer of the Society) proposed "Our Guests," and after expressing pleasure at the presence of representatives of so many branches of the Industry, said there was one person present who was not connected with any branch of it—namely, Mr. Ernest Brown, to whom they were all very much indebted for again honouring one of the Societies of the Industry with his presence. They were also very delighted to see so many members of the Council of The Institution of Gas Engineers primarily because, rightly or wrongly, they looked upon the Society of British Gas Industries as being the technical Society of the contracting side of the Industry, and being a technical Society it had much in common with The Institution. Indeed, they were hoping that with the rearrangements that were taking place within the Industry, the Society and The Institution would collaborate in a much fuller sense than had been possible in the past in the technical work of the Industry.

Continuing, Dr. Smith said that one of the greatest pleasures that he had personally on this occasion was to welcome Herr zur Nedden, the new Secretary of the German Gas Association. It was also a great pleasure to see present a number of their brothers from the Dominions.

The guest of all whom he personally wished to thank for coming, added Dr. Smith, was their national gas leader, Sir David Milne-Watson. [Applause.] It was Sir David who in a typically English, and almost haphazard, way had brought into being the British Gas Federation. He had, so to speak, just said "Here is something to play with." But that was not what he really meant. The Society of British Gas Industries were proud to have been made members of the Federation, because they felt this meant a big step forward. It meant more than merely a means for including the Society—or it ought to mean more. The contractors and manufacturers were anxious to play their part in the Gas Industry, and membership of the Federation was a great incentive to them to do so. The supply companies, however, must realize that the contractors could only participate whole-heartedly if there was due recognition of the services they were already rendering. The object of the Federation should be to draw fully on their ability and experience. One sometimes heard the question asked by some of the members, "What is the use of belonging to the Society when many competitors are not within the fold?" but it seemed to him patent in the state of affairs to-day that there was a very big advantage in being a member.

With regard to the British Gas Federation, Dr. Smith said he felt that something much less informal than was considered to-day to be necessary was vital to the Industry. In other words, they had been told that each of the entities would not have their constitutions altered in the slightest degree and that the Federation would not interfere with their activities. It was hoped and expected that this would be so, but that should not infer that the Federation was going to be an ornament and something which would only function when it was impossible to find any other body to deal with the matters concerned. If it was to be anything at all, it must be the supreme head of the Gas Industry in this country. It must talk for the Industry, and anything it did must not be considered an impertinence or an attempt to control the activities of any one of the entities. Even if that state of affairs could not come about at once it must come in the end. The Federation, of course, was not the first of the moves that had been made in recent times. Sir David was responsible for the development of the Joint Co-ordinating Committee, a most valuable development—good luck to it. It might be that some of its functions in the future would be found to devolve on the British Gas Federation. There was, however, plenty for the Federation to do apart from the acquisition of functions already performed by existing organizations, although there might have to be modifications.

Passing to another matter, Dr. Smith remarked that the President, possibly quite accidentally, overlooked to mention one of the most important sides of the Gas Industry to-day, namely, the development of benzole extraction. Benzole meant a great deal to the British Gas Industry to-day, and he would also like to underline the importance of creosote. Whereas up to two or three years ago creosote was a drug on the market and it was difficult to know how to deal with it and to get rid of it, to-day there was no reason why it should not bring in at least twice or three times the price that was being obtained for it a year or two ago.

There was, continued Dr. Smith, no more vital part of the Industry than the Technical Press, because to have judicious selection and dissemination in a well-arranged Press of the multitude of technical data that were available within the Industry was an invaluable asset to any Industry; and the Gas Industry was proud of its Technical Press. In that connection he congratulated the newest and youngest member, the *Gas Times*, on the extremely successful way in which they had launched their new enterprise. It was to be hoped that the standard they had set themselves would be maintained. In saying that, however, he did not for one moment wish to suggest that the already existing Press was not entirely adequate, from the technical point of view and in every way, for the purposes of the Industry, but it would not do them any harm to have the extra stimulation of a new point of view—he did not say the right point of view. [Loud laughter.]

He could not close without mentioning how much the Council were appreciative of the way in which the new Secretary of the Society was developing. [Hear, hear.] When it was found necessary to re-arrange the Secretaryship owing to the resignation of Mr. Griffiths—who had served the Society so well for many years—a great deal of thought and deliberation was given to the type of man required. It was felt that they required a man of experience, broad-gauged, and level-headed, and in that it was believed they had achieved success. [Hear, hear.]

The Toast was coupled with the name of Mr. C. Valon Bennett (President, The Institution of Gas Engineers), to whom Dr. Smith wished every success and the best of luck in the work that he was doing for The Institution.

Mr. C. VALON BENNETT said that the guests sincerely appreciated the manner in which they had been entertained and also the manner in which the toast had been proposed and received.

His period of office as President of The Institution was drawing to a close, and although he would have another opportunity of expressing his thanks to all who had endeavoured to make one very busy period of his life so pleasant, he would take the present opportunity of saying how much he appreciated the assistance given him by the members of the Society, and particularly those who were also members of The Institution. He welcomed very heartily the formation of the British Gas Federation, and had no doubt that it would function well provided there was a determination on the part of all its constituent members to work in complete harmony with one another. As Dr. Smith had emphasized, there was to be no alteration in the constitutions of the constituent bodies and there was to be no interference with them. Neither must there be any jealousies among each other, and he appealed to each of the five bodies constituting the Federation to give of their best in all directions and at all times. Thanking Dr. Smith for his remarks in connection with The Institution, Mr. Valon Bennett said that although Dr. Smith was no longer a member of the Council, he was a member of some of the Committees and did valuable work upon them.

The prosperity of the members of the Society of British Gas Industries, said Mr. Bennett, was dependent upon the prosperity of the Gas Industry in a very great measure, and he recalled that some time ago a certain gas engineer had asked him whether he knew if a certain firm was a member of the Society. Upon reference he had been able to say that this firm was a member, with the result that certain orders went to that firm while those firms which were not members were ignored. In this connection Mr. Bennett suggested that if the Society was to take its proper place in the Gas Industry it must let it be widely known who were members; and thinking this over, a suggestion had come to his mind which he put forward with some hesitation. He believed there was a badge or sign which every member of the Society was allowed to reproduce on advertisements appearing in the Technical Press, and his suggestion was that, subject to conditions carefully thought out by the Council, it might be made compulsory for the members to use that sign on all their advertisements. How could it be expected that gas undertakings should support the members of the Society unless they knew which firms were members? Therefore, he suggested that the exhibition of the badge should be a hall-mark of policy and a sign of co-operation. [Hear, hear.]

The final Toast of "The President" was proposed by Mr. DOUGLAS W. TURNER (Chairman of the Council of the Society).

In reply, Sir JOHN CADMAN expressed his appreciation of the honour conferred upon him in electing him President.

# A Symposium on Illumination*

## Reviewed by K. F. Sawyer, B.Sc.

It is perhaps rather surprising to learn that in the science of lighting or illumination almost 90% of the progress made in the last 5,000 years has been confined to the period since about 1920. With such a rapid expansion of our knowledge it is practically impossible for those who are not intimately in contact with the subject to maintain much more than a very broad outline of its present position. To those who wish to fill in this outline with some recent details and particularly to those who are daily brought into contact with lighting matters but have not time to study more profound treatises on the subject, I recommend a recent publication under the somewhat imposing title of "A Symposium on Illumination" edited by C. J. Webber Grieveson. This is not an exhaustive treatise, neither is it a popular exposition; it is essentially a collection of lectures given in 1933 under the auspices of the National Illumination Committee of Great Britain and the Illuminating Engineering Society, with the object of promoting interest among a wider public in the subject of illumination. Each lecture was given by an expert in the subject with which he dealt, and the book takes rather of the nature of a series of short monographs than of a connected whole. This makes available a greater variety of knowledge and experience than would be possible with any single author.

The book contains no revolutionary theories or startling revelations; it collects into one volume many of those facts and figures, researches and experiments, which go to build the science of illumination and which are scattered through its literature. Therein lies its value. Space does not allow the overdevelopment of any subject and hence the book forms informative reading for the layman and a useful refresher for those already initiated into the subject.

The eye is, of course, the final judge in any matter relating to lighting, albeit a very incompetent and deceptive judge in many cases. This introduces many complications into the measurement of light and demands limit of error which would never be tolerated in other branches of engineering. These vagaries of the eye are discussed by Dr. Walsh, particularly its behaviour under glare conditions. He gives an instructive little formula from which the glare effects may be deduced and expressed as a reduction in illumination. Then, in his typically lucid manner, he explains the candle and the lumen, brightness and illumination, leading up to a clear understanding of the polar curve and total flux. The actual measurement of light and the apparatus necessary for it are described by Professor MacGregor-Morris who adds a note on his own particular researches on the Fundamental Standard of Light. The measurement of daylight and coloured light are separately dealt with by Dr. Walsh.

Two sections are devoted to sources of light. The first, by Mr. Jones, deals with the filament type of electric lamp, and the second, by Mr. Smith, with the incandescent gas lamp. In both types of lamp light is generated by heating a body to a high temperature, and as the light output is roughly proportional to the twelfth or sixteenth power of the absolute temperature the aim has been towards obtaining higher and higher temperatures. A limit is set by the evaporation of the emitting substance at the higher temperatures with a consequent shortening of life. The electric section shows with considerable lucidity how, with due regard to all the other many factors which must be considered, it has been possible to manufacture an electric lamp having a good light efficiency with an economically reasonable life. In turn the gas section shows the reasons for the brilliance of the gas mantle and, by investigating the physics of burner design, how a burner can be designed to function at full efficiency under any predetermined set of conditions.

Every source of light has its own particular distribution which, in most cases, is not that best suited to the job to which it is to be applied. It becomes necessary therefore to redirect the light as, for example, in street lighting installations, chiefly by means of reflectors or refractors. The design of a reflector or refractor to give any predetermined distribution is fully described by Mr. Wilson and is supplemented by tables showing the amount of light in any installation which eventually reaches the working plane, due allowance being made for the distribution from the lamp and the conditions of the surroundings.

The section dealing with Public Lighting is somewhat disappointing. This subject, which is so very important at the present time, forms almost the shortest section in the book, and essential points are only just touched upon. The actual lecture as read by Mr. Colquhoun was supplemented by a large number of very good slides, but as these have not been reproduced the printed lecture has suffered very badly in consequence.

There remain two further sections. In the one Mr. Read deals with light for decoration and entertainment where illumination passes from the realm of the slide rule to the greater heights of æstheticism; and in the second Mr. Weston deals with the application of light for the welfare of the community—its safety, health, and happiness. We must have not only just enough light by which to see, but enough to see without strain—and then more light to cheer us up. The psychological effect of good illumination is only beginning to be appreciated.

In its class the book is probably unique for the diversity of its contents and its broadness of compass. All the important sections of the subject have been dealt with; but the book would have gained much in value had certain of the more important sections been enlarged subsequently to the lectures being read. As it stands the book is very useful; with extensions it could be most valuable.

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# Eastern Counties Gas Managers' Association

The 89th Half-Yearly Meeting of the Eastern Counties Gas Managers' Association was held at Stamford (Lincs.) on May 15 and 16 under the Presidency of Mr. BERNARD CLARKE, Engineer, Manager, and Secretary of the Stamford and St. Martins Gas Light and Coke Company.

The 89th half-yearly meeting of the Eastern Counties Gas Managers' Association was held at Stamford (Lincs.) on May 15 and 16 under the Presidency of Mr. Bernard Clarke, Engineer, Manager, and Secretary of the Stamford and St. Martins Gas Light and Coke Company.

The meeting commenced on Wednesday morning, May 15, when the members assembled at the Stamford Gas-Works and were welcomed by Mr. Clarke. After inspecting the Works, a visit was paid to the Works of Messrs. Williamson Cliff, Ltd., where much interest was taken in the manufacture of retorts, fire-bricks, &c., and where Mr. J. H. Troughton, of Newmarket, opened the firm's new ceramic laboratories (a description of which is to be found on p. 434 of to-day's "JOURNAL").

In calling upon him to do so, Mr. P. K. Banks, Joint Managing Director, said that they hoped, with the assistance of a permanent chemist, that they would be able to watch still more closely the products of the firm. They had in Mr. Arthur Green one whose aim would be progress, and in that he would have the firm's full support and co-operation.

Declaring the laboratory open, Mr. Troughton said that the research work which would be carried on there would enable the firm to enhance further the value of their earths, clays, silicas, &c., for the making of retorts and bricks for the gas and many other industries. Research work was the ideal that all up-to-date manufacturers had got to adopt. The refractories of that firm were well known to them because the retorts and bricks and other articles made by them were known all over the kingdom, and he could bear testimony to the high quality of them. Through research work they would endeavour to find out some of the various commodities in clay which ought to be left out because they were more or less useless and retain those of a refractory character. That would enhance the quality of their manufactures. When the laboratory was completely fitted it would be a very great adjunct to the firm. Mr. Green went to the firm with excellent credentials, being a silver medallist, and he had been the joint collaborator with others in presenting Papers to The Institution of Gas Engineers. They wished him every success. He was a young man who had given practically the whole of his life to the study of matters connected with the manufactures of such a firm, and he congratulated the firm on securing his services.

Mr. Green was introduced to the Association, and Mr. W. L. Jackson, Joint Managing Director, thanked Mr. Troughton for performing the ceremony. No industry had more strenuously supported scientific research than the Gas Industry, he said, and no industry had reaped greater benefits from it. They were assured that when the laboratory was equipped it would be one of the most up-to-date in England. They hoped it would enable them to increase the lasting qualities and efficiency of their retorts.

## Luncheon.

The members were afterwards entertained to luncheon at the George Hotel by the Chairman and Directors of the Stamford and St. Martins Gas Light and Coke Company. Mr. E. DALTON, Chairman of the Company, presided.

Mr. G. STEVENSON (Long Eaton) submitted the toast of "The Stamford Gas Company," and recalled that seven years ago he recommended his then Assistant, Mr. Bernard Clarke, for the position of Engineer and Manager of that Company. He had every confidence in him, knowing him to be a really good man, highly technical, full of initiative and enterprise, and one in whom everyone could place implicit trust. Since Mr. Clarke came to Stamford he had been permitted to make a lot of improvements, and that day they had seen model works of their type and size. It was doubtful if any gas-works were more efficiently run than those at Stamford. They were modern, and one part of their plant was the first of its kind in the country. The Works were "born in 1823 and were still going strong." Though old in years, they were responsive to the changing conditions of the Industry and he felt they could look forward to a prosperous future.

Gas, continued Mr. Stevenson, had been proved to be a necessity to modern civilization, serving to enhance the amenities of life and enabling consumers to enjoy comforts which were not possible a hundred years ago. Mr. Stevenson mentioned that Mr. Dalton's family had been connected with the Company for over half-a-century, and Mr. Dalton himself had been a Director for 20 years.

Responding, the Chairman, Mr. DALTON, welcomed the members on behalf of the Stamford Company. They might say in connection with their Works that they were imitated by many, equalled by few, and excelled by none. He conveyed to the members the compliments of their oldest Director, Mr. James Ringham, aged 87, who had served the Company for 43 years.

Mr. Dalton said he often wondered whether they appreciated the work of their predecessors in laying the foundations of their Industry in such a marvellous way and in overcoming their many difficulties with the crude implements at their disposal. During the last 20 years rapid

A Group of Members of the Eastern Counties Association at Stamford.

strides had been made, and it was one of the finest industries in the world, worked by British labour and British brains on British capital. In conclusion, he congratulated the Association on having as its President Mr. Bernard Clarke, in whom they had every confidence.

The health of the Visitors and Press was honoured on the call of Mr. P. K. BANKS (Stamford).

Col. W. M. CARR, O.B.E., T.D., Senior Vice-President of The Institution of Gas Engineers, in reply, apologized for the absence of the President of The Institution of Gas Engineers, Mr. C. Valon Bennett, whom he had the honour to represent at the Meeting as he, Mr. Bennett, had an important business engagement in the South. He congratulated the President, and the Directors of the Stamford Company, on the excellent state of the gas-works plant they had been privileged to inspect that morning. It ind cated what could be achieved by a young, keen, and enlightened Engineer and Manager working with a progressive Board of Directors. The general arrangement and condition of the Manufacturing Plant were borne out by the excellent working results indicated in the Presidential Address to be presented.

## Holding Companies.

The Chairman had referred to Holding Companies, and he suggested that if all undertakings of the size of Stamford, which was operated to give results comparable with the largest undertakings, and equipped and maintained on an equal scale, were as efficiently managed there could be no argument for improved results by incorporation in a Holding Company. Much had been said about the advantages of collective buying; these advantages were, however, very small, and the main argument for the formation of Holding Companies, and the grouping of undertakings, lay in that by such means undertakings might be able to provide better service and selling organizations for the consumer. Technical experts were to-day required as salesmen; they should be able to explain to consumers the relative value of gas and other fuels, and to place before them, in the simplest form, clear and accurate estimates of the weekly cost of supplying their individual requirements. He thought that it required considerable experience to be able to assess such requirements and values, and he considered that it was on this side that Holding Companies should be able to offer the greatest assistance. It was essential, however, that if the Holding Companies were to succeed, the capital of the companies acquired should be on an economic basis.

The advantages of local interest and control should be maintained as far as possible through the existing Directorate and Management, and the initiative and responsibility of such local Management should be fully maintained. If purchases were made by Holding Companies merely on the basis of dividends that had been paid in the past, a Company that might be considered to be over-capitalized, but which had maintained a high rate of dividend at the expense of expenditure on repairs and renewals, and justifiable expenditure out of revenue on business development, would receive a higher value than an undertaking which had been operated on a sound conservative policy carrying as much capital expenditure out of revenue as possible, and thereby enabling gas to be sold cheaply. To-day the most important thing was to provide cheap gas, and to reduce, by increasing output, standing and administrative charges.

The Gas Industry had always attracted the genuine investor, and he thought that an examination of the Stamford Company's shareholders' list, as in the case of other similar Companies which he knew, would probably indicate that the investors, in some instances, could be traced back through several generations. There was no room in the Industry for the speculator, and the object of everybody concerned should be to avoid building up capital values in their relation to total sales of gas.

## Gas and the Nation.

He had previously indicated that it was easier to make gas than to sell it. With the freedom given by recent Parliamentary legislation, they could all now consider how the advantages could be most suitably passed on to the consumer by means of tariff charges, and so displace solid and other fuels on an economic basis to the advantage of the Nation as a whole. He suggested that Lord Willoughby de Eresby, as a Member of Parliament, and an honoured guest at that table, would no doubt appreciate that electricity had been boosted by a succession of Governments as the solution of the heating problems of the Nation. The Gas Industry knew, and should lose no opportunity of telling Parliament and the country on every possible occasion, that the fuel to solve the heating problems of this country both industrial and domestic was gas—as the cheapest form of clean and easily controlled heat obtainable from coal.

The Gas Industry should not be afraid to make and present to the public true and accurate comparisons of costs of utilization of gas and other fuels, and in this latter category he, of course, included electricity, in view of the attempt—which was doomed to failure—to make it a national fuel.

Mr. C. A. KING, Managing Director, the "GAS JOURNAL," also responded.

"The Town and Trade of Stamford" was submitted by Mr. F. PRENTICE (Ipswich) and response came from the Mayor of Stamford (Councillor E. IRESON), who referred to what Mr. Clarke, with his Directors, had done to reorganize and reconstruct the Stamford Gas-Works. Mr. Clarke had been an asset to the town in many other ways.

Lord WILLOUGHBY DE ERESBY, Member of Parliament for Rutland and Stamford, proposing the toast of the Association, outlined the progress made during the last 25 years by the Gas Industry. In 1910, the production of gas was about 200 thousand million cu.ft.; now it was 326 thousand million, and consumers had increased from six to ten millions. It was a great achievement, and they must also remember that the benefits of such progress had not been restricted to the consumers. The Gas Industry was the chief consumer of coal in the country. The country built its prosperity on coal, and they welcomed any improvement which would help the coal industry. The Gas Industry employed directly over 100,000 men and indirectly many thousands more. In addition, over 200 million pounds was invested in gas undertakings and had proved an extremely safe and secure investment for people in the years of financial and trade depression.

The Gas Industry was of real national importance, went on Lord Willoughby, and he thought the Government recognized its importance and had given it a greater measure of liberty. He believed that it was not the duty of the Government to act as company directors—they had quite enough to do otherwise—but it was, possibly, the duty of the Government to interfere to a certain extent in industry to prevent the customers and employees from being exploited, and, most important of all, to provide conditions of confidence and cheap money so that the Industry could go ahead under the management of those born and bred to the job.

Lord Willoughby complimented Stamford on having such an extremely efficient and competent Gas Engineer. Mr. Clarke, he said, was a man of real zeal and enthusiasm, and he congratulated him on the high position he held.

Mr. CLARKE briefly responded.

## The Business Meeting.

The business session followed at the Town Hall, Mr. CLARKE presiding.

The PRESIDENT referred regretfully to the death of Mr. F. H. Lamb, of Manchester, a personality whom they always welcomed and one whom they always respected. A letter of condolence had been sent to the family, and the members endorsed that action by standing in silence.

Letters of apology for absence were received from Mr. C. Valon Bennett, President of The Institution of Gas Engineers, and others.

Mr. Clarke then presented the Past-President's Medal to Mr. F. G. Brockway. The medal, he said, commemorated the service rendered to the Association by Mr. Brockway last year. They had a very successful year. Their meetings at Cleethorpes were most enjoyable and their meeting in London was a great success. He asked Mr. Brockway to accept that memento of a year of office which, he trusted, was very happy, of their respect of his ability, and of the service which he rendered to the Association.

Mr. Clarke also mentioned that the Cleethorpes Gas Company had given to the Association a new President's portfolio of office to commemorate the Presidency of Mr. Brockway and of his late father in 1906. Mr. Clarke thought that it was a very happy gift, which the Association very much appreciated.

Returning thanks, Mr. BROCKWAY congratulated Mr. Clarke on the success of the present meetings and thanked him for the gracious manner in which he made the presentation. He was not more anxious than most of them to assume the office of President, he said, but with no hesitation and the greatest sincerity he could assure them it not only afforded him a good deal less worry but a great deal more pleasure than he anticipated, thanks to the loyal support and efficiency of the officers, without whose co-operation any position of that kind would be rendered very onerous indeed.

The following were elected to membership: Mr. Sidney R. Hughes, of Stowmarket; Mr. J. V. Knight, of King's Lynn; Mr. Harold Shewring, of Cambridge; and Mr. W. H. Blundstone, of Newark. Mr. W. A. Scott, 50, Cannon Street, E.C. 4, was elected an associate member. These were proposed *en bloc* by Mr. J. H. Troughton (Newmarket) and seconded by Mr. W. A. G. Hardy (Beccles).

Moving the adoption of the Committee's report and balance-sheet, the PRESIDENT said the Association was in a

very healthy and prosperous condition, and had improved considerably on the year.

Seconding, Mr. F. YOUNG (Skegness) said the report and balance-sheet showed a record of progress and a very healthy state of financial affairs. The balance brought forward was increased by about £20 during the year, but why an Association of that kind wanted such a big balance he did not quite know, but no doubt they would find a use for it. They could rest assured that everything was in order with the Association.

Supporting, Mr. H. R. WIMHURST (Bury St. Edmunds) said that as he had not been in any way responsible for the

report or accounts or the work of the past year he would like to congratulate the President, Secretary, and Committee on the excellent report they had been able to put before them. The report spoke for itself, telling them of a very useful year's work and a year which would stand comparison with any year in the history of the Association.

The PRESIDENT stated that on the President's Benevolent Fund on Dec. 31, there was a balance in hand of £117 10s. and it was still growing. It was recommended that a grant of £5 5s. should be made from it to the Benevolent Fund of The Institution of Gas Engineers.

This was agreed to on the proposition of Mr. W. A. G. HARDY (Beccles), seconded by Col. J. A. KENNINGTON (Grimsby).

## President's Benevolent Fund.

Mr. J. H. TROUGHTON (Newmarket) moved to adopt the Committee's recommendation that the £10 10s. should be transferred from the funds of the Association to the President's Benevolent Fund. The fund, he said, was not drawn upon to a great extent, but it was very satisfactory to the members to know that should any of them fall on evil times they would be able to look for help to some extent.

Mr. YOUNG seconded, and the motion was carried.

Mr. E. F. KEABLE (Gorleston) heartily supported the step. Up to the present, he said, they had added nothing material to the fund and it was very pleasing to him, as it was founded during the time he was Secretary, to see them increase it.

## President's Address.

Mr. BERNARD CLARKE then read his Address, which was published in the last issue of the "JOURNAL."

Mr. F. G. BROCKWAY then moved a vote of thanks to Mr. Clarke. He took it that Mr. Clarke, in common with all others who had had to compose those Addresses, had looked down the street of years to see what could be gathered from the past and what inspiration it offered for the future. He submitted, however, that the President had not relied on the flickering beacons of the past, but on his own technical skill and personality. His Address had ranged over some of the most vital topics of the Industry, and it would incite inspiration and admiration far outside the bounds of the Association. He had produced an Address in which shrewd observation, careful investigation, and painstaking application of sound principles of technique had been combined. It would make that meeting memorable to them. It was an Address on which they could sincerely congratulate him. He proposed that they tender Mr. Clarke their best thanks for his contribution to the literature of the Industry.

Mr. KEABLE seconded. They highly valued the Paper, he said. It was no easy matter for a gentleman occupying a position on a small works to serve up a Paper like that, but Mr. Clarke had produced a Paper which would go down as a valuable technical record in the annals of the Industry. They admired his unassuming personality. Much had been said of the efficiency of the Works, and if the Works was not as large as some in the country at least it was a large Works in miniature, and that was a fine reflection on their President.

Returning thanks, the PRESIDENT said the production of the Address was an ordeal to him, but he genuinely strove to do something which he thought would be helpful to men on small works and in similar positions to his own. If it had been of help then it justified the effort that had been made. He sincerely appreciated the compliments paid to him and thanked the members for receiving the Paper in such a manner.

## Education.

Mr. KEABLE presented the report of the Education Committee. This stated that students had again taken advantage of the Committee's guidance and help, and arrangements had been made for students from the following towns to take the undermentioned examinations: Gas Engineering (Ordinary Grade)—Colchester 1, Norwich 1, Leighton Buzzard 1; Gas Engineering (Higher Grade)—Newark 1; Gas Engineering (Diploma Grade)—Newark 1; Gas Supply (Ordinary Grade)—Lowestoft 1, Worksop 1. Gasfitting classes had again been well attended, the list of centres and numbers attending being as follows: Great Yarmouth, Lowestoft, and Gorleston 18, Ipswich and Felixstowe 14, Cambridge 9, Norwich 14, Newark 11—Total 66. It was gratifying to note that 22 of the above students were taking the Final Grade, having pursued their studies over the full period of five years.

The Committee desired once more to record its appreciation of the work done by the tutors of the classes and their indebtedness to the Board of Education for the short courses for teachers, to the gas undertakings which had made the training possible and given encouragement by prize awards, and to the Education Authorities in the cities and towns named for their continued and valued co-operation. Thanks were also due to the engineers of Cambridge, Colchester, Great Yarmouth, Ipswich, Lincoln, Lowestoft, and Norwich for having furnished competent examiners for the Practical Gas Fitting Examination.

The Committee expressed the hope that the training secured would be used to the full extent by the undertakings concerned and that due recognition would be given

to fitters and others who thus qualified for higher service in the Industry.

The number of students taking the Domestic Salesmanship course during the session under review was as follows: Ipswich 10, Cambridge 2, Great Yarmouth 1—total 13. The Committee arranged those examinations and wished to thank sincerely the engineers of those undertakings who allowed the examinations to be held on their premises, and provided suitable supervisors. In view of the increasing competition, every salesman was urged to take advantage of the valuable scheme.

Mr. Keable added that he went to London as the As-

sociation's District Representative, and the Institution had honoured him by a seat on the Board of Examiners; and he had been nominated for a third period as examiner in gas by the City and Guilds.

The PRESIDENT said that the report reflected a good deal of work carried out by Mr. Keable, and they recognized his appointment on the Examining Board as well-placed confidence.

Moving the adoption of the report, Mr. THOMAS GLOVER (Norwich) said it revealed work of the right sort. One was particularly interested to learn that the classes for fitting were well attended. It was very important that they should educate their fitters to a high state of efficiency so that they could please their consumers. They would like to congratulate Mr. Keable on the sustained efforts he had made in the matter and they wished him every success in the future.

Mr. F. YOUNG seconded the motion; and Mr. W. W. TOWNSEND, in supporting it, referred to the difficulties of students, especially juniors, in obtaining the various books needed in their studies. Something should be done to enable especially those in country districts to obtain works without purchasing.

Mr. KEABLE, in the course of his reply, assured Mr. Townsend that no student really anxious for knowledge need be troubled if he got into touch with him (Mr. Keable). As for education as a whole in the Industry, examination figures made a very fine show of men coming on to take their places in the Industry. In conclusion, Mr. Keable referred to the fact that The Institution Silver Medal had been awarded to Mr. F. B. Richards. It was the first time that the Eastern Counties Association had received that honour, and they would accept congratulations themselves and tender them to Mr. Richards.

### Autumn Meeting.

The PRESIDENT informed the meeting that the Committee were putting forward the suggestion that the Autumn Meeting, usually held in London, should this year comprise a visit to the Stanton Ironworks, who had issued an invitation and would provide conveyances from Nottingham and a room for the business meeting. The Committee felt it was essential that a good attendance be assured, and this appeared certain on a show of hands. Mr. PRENTICE thereupon proposed and Mr. THOMAS GLOVER seconded, and it was carried, that the invitation be accepted.

Finally, the PRESIDENT struck a personal note by expressing sincere appreciation of the presence of the man who was responsible for his training, Mr. G. Stevenson, of Long Eaton, and acknowledged the compliment he had paid him by supporting him on that occasion.

Mr. STEVENSON spoke of the pleasure it had given him to be there and listen to their President and see him so ably conduct the affairs of the Association. He recalled that if ever they had an intricate problem which needed sustained consideration they always gave it to Mr. Clarke because they could rely on getting a sensible, well-reasoned answer. He predicted for Mr. Clarke a brilliant future.

### Annual Dinner.

The dinner, which was held at the George Hotel, was largely attended and greatly enjoyed.

Mr. THOMAS GLOVER, C.B.E., submitting the health of "The Stamford Gas Company," congratulated them on their choice of Engineer and said they certainly had a bright and happy future before them, working as they did in harmony with the Town Council and with their consumers.

Mr. CHARLES DALTON having replied, the health of the guests was drunk on the call of Mr. W. W. TOWNSEND. Mr. GODFREY PHILLIPS replied.

Responding to the toast of the Association, proposed by Mr. J. E. C. POTTER, Mr. G. WRIGHT, of Lincoln, paid a tribute to the ungrudging service of their Secretary, Mr. W. C. Chapman. Mr. Wright went on to say they all realized what gas meant to the community, but certain people had been saying for years that gas was a thing of the past. If those who so easily thrust gas on one side would study the magnitude of the Industry they would realize what a real calamity it would be to the world if gas was to lose any large percentage of its popularity and usefulness. An enormous amount of capital was invested in it, millions of tons of coal were utilized, and thousands of pounds were paid in wages. The little interest the Government and public took in the Gas Industry, which was so necessary to the welfare of the nation not only in time of peace but in times of war, was a scandal. They must do all in their power to convince the public that gas was the cheapest and most reliable commodity, which, if used through modern appliances, gave service second to none.

Mr. TROUGHTON submitted the toast of the President, and Mr. CLARKE that of the Secretary.

A programme of entertainment added to the enjoyment of the evening.

### Ketton Cement Works.

A very interesting visit was made on Thursday to the Works of the Ketton Portland Cement Company, Ltd., and generous hospitality was offered by the Company to the large party of visitors who took advantage of the invitation.

The Ketton Estate comprises altogether about 1,200 acres outside Stamford, on which are situated the Cement Works and the Quarries. The latter have been worked for many centuries, but it was not until seven years ago that research showed the peculiar suitability of the products for the manufacture of portland cement. Operations for the erection of the Works were commenced in 1928, and in the remarkably short time of twelve months cement was actually being despatched to customers. The capacity of the plant is now 150,000 tons per annum. It should be noted that Messrs. Thomas W. Ward, Ltd., of Albion Works, Sheffield, are responsible for the distribution of Ketton Products.

The visitors last Thursday evinced the keenest interest in all the operations, which were fully explained by an expert staff, and at the conclusion of the tour over 70 sat down to lunch as guests of the Company. In the few toasts which were honoured, there were repeated references to the kindness and hospitality of the Chairman of the Ketton Company, and of the Works Manager, Mr. Billson, who with his staff had been indefatigable in making the day a success.

# Institution of Gas Engineers' Examinations

We conclude from p. 373 of last week's "JOURNAL" the questions which were set in the Examinations in Gas Engineering and Gas Supply, which were held on April 27 and May 4 respectively, under the Education Scheme of the Institution of Gas Engineers.

## GAS SUPPLY.

HIGHER GRADE.

PART I., from 2 p.m. to 5 p.m.

*(Two questions only in Group A and three questions only in Group B should be attempted.)*

GROUP A.

1. Define what is meant by "Load Factor" in relation to the Gas Industry.
   How has the Load Factor changed in the past 50 years, and what change is likely in the future?
2. A swimming bath containing 100,000 gallons of water has to be maintained at 70° F.
   It is known that without heat the water would cool from 70° F. to 65° F. in two hours.
   Give details, including maximum rate of gas consumption, of suitable equipment.
3. What recent developments have been brought about in gas fire design and construction?

GROUP B.

4. Define briefly the following terms as applied to the heat treatment of metals:
   (*a*) Annealing,
   (*b*) Hardening,
   (*c*) Carburizing,
   (*d*) Normalizing and
   (*e*) Oxidizing atmosphere.
   How would you test a working furnace to ascertain if a reducing atmosphere existed?
5. What steps would you take to meet competition from electricity in regard to cookers, water heaters, and fires?
6. Discuss the considerations governing "comfort" conditions in domestic room heating.

7. Make simple sketch plans showing the various systems of spacing street lamps, and indicate in each case how the test points are located by the British Standard Specification for Street Lighting.
Which system of spacing do you prefer for main roads about 40 ft. wide? Give your reasons.

PART II., from 6 p.m. to 9 p.m.

*(Two questions only in Group A and three questions only in Group B should be attempted.)*

GROUP A.

1. (*a*) What type of meter would you instal to deal with a load of 25,000 cu.ft. per hour? Give your reasons.
(*b*) What precautions would you adopt if fixing a gas meter in a factory having a private gas compressing plant? Give your reasons.
2. The flue equipment from an instantaneous water heater is as follows:
(*a*) Primary flue.
(*b*) Baffle.
(*c*) Secondary flue.
(*d*) Terminal.
State fully what you understand by these fittings and their purposes.
Make a sketch of any type of good baffle.
3. If a builder invited your co-operation regarding a proposed all-gas house, what recommendations would you make regarding flues and piping in order to ensure a satisfactory result?

GROUP B.

4. In comparing the respective merits of two types of multi-point instantaneous water heaters, what details would you take into consideration?
Indicate in your answer what you consider to be the order of importance of these details and give your reasons.
5. What type of reducing governor would you recommend for use on a high pressure feeder main?
State fully your reasons, with diagrammatic sketch.
6. Give details of one type of reflector and one type of refractor which may be attached to street lamps and show diagrammatically the advantages of each.
7. What do you understand by a two-part tariff for the sale of gas?

## DIPLOMA EXAMINATION IN GAS ENGINEERING (Supply).

PART I., from 2 p.m. to 5 p.m.

*(Three questions only should be attempted.)*

1. (*a*) How does poisoning occur with carbon monoxide?
(*b*) What are the symptoms in a person suffering from such poisoning.
(*c*) What steps should be taken in respect of such a casualty?
2. Show how Pole's formula can be developed from fundamental principles, and state why its application is limited.
3. A consumer requires a furnace for hardening the cutting edges of high speed steel lathe tools which are approximately 1 in. square × 9 in. long.
What type of furnace would you recommend and what temperatures are required? Give a sectional sketch with approximate dimensions.
4. Discuss briefly the position of gas as a fuel in relation to its competitors for the central heating of large buildings.

PART II., from 6 p.m. to 9 p.m.

*(Three questions only should be attempted.)*

1. Give a typical approximate analysis of good gas coke. What are the factors affecting the combustion of coke? What would you expect to find in the flue gases from a well designed coke boiler working at its rated output, and what useful information can be derived from such an analysis?
2. Give an account of the various applications of thermostatic control.
Draw line sketches of two thermostats and state how they work.
What faults are likely to develop?
3. State what is meant by:
(*a*) Rated illumination,
(*b*) Service illumination,
(*c*) Spacing height ratio,
(*d*) Unit of system and
(*e*) Isocandle diagram,
as applied to the British Standard Specification for Street Lighting.
Without making actual calculations, describe a method (with formulæ) of determining the mean lower hemispherical candle power of a gas lamp.
4. What considerations would guide you in determining the safe maximum gas consumption for an instantaneous water heater?

# The Birmingham Section of The British Industries Fair

Though the gas exhibits which have been independently staged in the Birmingham Section of the B.I.F. lack something of the force which has been evident in former years, by reason of the absence of a Joint Gas Section, there are, nevertheless, at Castle Bromwich some excellent individual displays. These cover many phases of gas service, and act at any rate as a reminder of the continued progress of the great Industry whose co-operative effort formed so important a section of the Fair when it was held in February.

There are this year 1,030 exhibitors at the Birmingham Section of the British Industries Fair, which opened at Castle Bromwich on Monday and continues until the end of the month.

The exhibits are arranged in four groups with an outdoor section attached to each. The groups are: (A) Hardware, ironmongery, brassfoundry, farm and garden equipment; (B) Building, decorator's materials, general heating and cooking; (C) Electricity, generation and transmission, industrial and domestic appliances for heating, cooking, lighting, and power; and (D) Light and heavy machinery, power generation (prime movers), plants for industrial purposes, metals, tubes, and sections; road and contractors' plant and materials; and transport.

Under these various headings there are, of course, displays by a number of firms well-known in the Gas Industry, who have decided, in the absence of the Joint Gas Section, to exhibit independently. Below are a few brief particulars of some of the exhibits, arranged in alphabetical order.

*Babcock & Wilcox, Ltd.*—Here may be seen what is claimed to be the largest travelling grate stoker in the world, together with boilers, furnaces, accessory equipment, and, indeed, everything for the boiler house.

*Baldwins, Ltd.*—This firm are showing examples of bright silver finish sheets, normalized for extra deep drawing; also "Balco" new quality enamelling iron, and heavily-coated tinned sheets and tinplates, which are specially suitable for gas meter work.

*British, Foreign, and Colonial Automatic Light Controlling Company, Ltd.*—On this stand are examples of the firm's gas switches and automatic gas controllers.

*British Reinforced Concrete Engineering Company, Ltd.*—This firm supplied electrically-welded high-tensile drawn steel fabric as reinforcement for the concrete surface of the Exhibition Road. They also manufacture road reinforcement in rolls or sheets.

*J. Brockhouse & Co., Ltd.*—This firm are showing their stampings, forgings, pressings, springs, axles, and trailer parts, in addition to examples of their well-known coke and "C.C." gas and coke grates.

*Cambridge Instrument Company, Ltd.*—Here is a comprehensive selection of instruments for industrial and engineering purposes, including apparatus for measuring temperature, pressure, and humidity, as well as gas analysis, &c.

*Carron Company.*—Among the varied selection of the manufactures of the Carron Company, of Carron, Falkirk, there are at least three items of interest to the Gas Industries. The No. 627 Gas Range is displayed in an enamelled finish which makes for cleanliness and enhances the appearance of the kitchen. A feature of this Range is that further units can be added at any time, thus making a 2, 3, 4, or 6 oven wall or central range. It can also be supplied complete as required. An enamelled gas-heated boiling pan has the cover fitted with counter balance gear and vapour connection in place of the customary back

balance weight pulley and chain supported on the back standard. An all-enamelled gas table cooker is also shown, a feature being the oven door flush with frame, thus simplifying cleaning.

*Cellactite and British Uralite, Ltd.*—On this stand are examples of the firm's "Cellactite" asbestos protected metal roofing and roof ventilators, "Urastone" incorrosible flues, fittings, ducts, &c., together with "Uralite" fireproof sheets and "Asbestone" flat and corrugated sheets, and tiled gas fire surrounds.

*Chaseside Engineering Company.*—This firm are demonstrating their "Hi-Lift" shovels, half-yard model on solid tyres and one-third-yard on pneumatic tyres. These models range from five to forty tons per hour.

*Cochran & Co. (Annan), Ltd.*—A standard coal-fired Cochran boiler of 600 sq. ft. heating surface is shown in operation, supplying steam for heating a portion of the Fair buildings.

*Alexander Duckham & Co., Ltd.*—This exhibit includes a comprehensive display of the firm's lubricating and cutting oils, greases for all kinds of industrial work, rust preventive mediums, hand cleanser, and samples of bearings, "Keenolized" parts, oil fountains, and suds pumps.

*Eagle Range and Grate Company, Ltd.*—Here is a wide range of cooking and heating apparatus of modern design and suitable for all requirements, including Eagle coke ranges, combination grates, portable grates, and gas-coke fires.

*Economic Gas Boiler Company, Ltd.*—On this stand are examples of the firm's "Economic" gas washing machines, including the new "Midget," with white porcelain-enamelled table top, also boilers in grey mottled, coloured porcelain enamel, and galvanized finish.

*Electrolux, Ltd.*—A range of refrigerators, including gas-operated models, is exhibited by this firm, in addition to many other of their well-known products.

*Expanded Metal Company, Ltd.*—A length of the Exhibition roadway consists of concrete reinforced with "Expamet" reinforcement supplied by his firm.

*Sidney Flavel & Co., Ltd.*—A wide range of gas appliances is shown on this stand, including their "Jubilee" and "Kabineat" cookers, built-in and independent gas fires, "Radiant-Panel" gas heaters and radiators, and their new "Il-Co-Rad" heaters which have recently been described and illustrated in these columns. Examples of their well-known "Metro" coke fires, "Metro-Log" and "Lumetro" gas fires are also exhibited, making a very attractive and colourful display.

*Forth and Clyde and Sunnyside Iron Companies, Ltd.*—In addition to examples of their agricultural ironwork, this firm are also showing a range of their cooking and heating appliances.

*Ideal Boilers and Radiators, Ltd.*—On this stand is a selection of "Ideal" gas boilers and radiators in pleasing finishes, together with other heating accessories.

*Imperial Chemical Industries, Ltd.*—This firm have a number of exhibits of interest to the Gas Industry, including apparatus for the removal of oil and grease from metal parts prior to overhauling; also enamelling, cellulose spraying, sandblasting, and other plant.

*E. E. Jeavons & Co., Ltd.*—A portion of the Exhibition road consists of this firm's non-skid surfacing material, comprising aggregate and washed sand from their own quarries.

*C. H. Johnson & Sons, Ltd.*—This firm are demonstrating their concrete breakers and mixers, earth borers and rammers, pipe-laying winches, trench expanders, &c.

*Thomas William Lench, Ltd.*—This firm are showing examples of their bolts, nuts, rivets, screws, &c., black, bright, and galvanized, in all metals and finishes, together with stainless steel and malleable iron castings.

*Donald Macpherson & Co., Ltd.*—Modern industrial finishes for heat-resisting purposes are exhibited on this stand, together with synthetic processes, cellulose decorative coatings, heat and oil resisting compounds, baking varnishes, anti-rust primers, stoving japans, insulating varnishes, &c.

*Maxol Heaters, Ltd.*—Instantaneous gas water heaters for domestic and commercial applications are exhibited by this firm, together with appliances for the supply of boiling water instantaneously.

*National Benzole Company, Ltd.*—An interesting exhibit by this firm is a working model "From Coal Seam to Carburetter," illustrating the various stages in the production of benzole. National benzole is produced from British coal at numerous coke ovens, steelworks, gas-works, and tar distilleries throughout the country, and this stand will, therefore, be of particular interest to all industrial areas, as well as to motorists.

*Nobel Chemical Finishes, Ltd.*—Here are examples of air-drying and stoving finishes suitable for gas appliances, in addition to cellulose finishes for brushing, spraying, or dipping. Insulating varnishes and heat-resisting finishes are also shown, as well as the "Deoxidine" cleaning process.

*Patent Copper Couplings Company.*—This firm are exhibiting a range of their patent "Conex" compression joints for light copper tubes, hot pressed copper pipe unions and fittings, cast brass sockets, ferrules, junctions, bends, steam pipe joints, and towel airers.

*Pinchin, Johnson, & Co., Ltd.*—Further examples are to be seen on this stand of paints, varnishes, stains, enamels, and lacquers for the protection and decoration of industrial products of all kinds.

*Rotherham & Sons, Ltd.*—On this stand are examples of the firm's sight feed lubricators, gauges, grease cups, valves, taps, oil pumps, &c., together with various other accessories in the way of instrument clocks, gauge movements, and components.

*R. Russell & Sons, Ltd.*—A comprehensive range of gas appliances is exhibited by this firm, including, of course, their well-known "New Herald" gas combination, gas cookers, "Peveril" gas fires, and a greenhouse heater.

*Siebe Gorman & Co., Ltd.*—Included in this exhibit are examples of the firm's self-contained oxygen breathing apparatus, resuscitating apparatus (oxygen and oxygen + $CO_2$ systems), gas masks, dust masks, and many other protective and safety devices.

*Jas. Southerton & Son, Martineau, & Smith.*—This firm are showing selections of their gas and water fittings, lubricators, cocks, &c., together with various designs of spraying equipment.

*Spencer-Bonecourt, Ltd.*—Photographs and drawings are exhibited on this stand describing and illustrating the application of the firm's high-velocity waste heat boilers to carbonizing and steelworks practice.

*Stanton Ironworks Company, Ltd.*—In addition to a portion of the Exhibition road being constructed of this firm's cast-iron sections, as laid throughout the new Mersey Tunnel, they are also showing examples of their concrete lamp standards, kerbs, slabs, and fence posts, as well as cast-iron manhole covers and frames.

*Staveley Coal and Iron Company, Ltd.*—Pipes, sand-spun and vertically cast, are exhibited by this firm, in addition to their flexible joints, tarred slag, chemicals, and by-products.

*John G. Stein & Co., Ltd.*—This firm are showing all types of refractories for use in industrial furnaces, together with iron and steel furnaces, boilers, gas retorts, coke ovens, oil refining plant, chemical works, &c.

*Stewarts & Lloyds, Ltd.*—Here are to be seen samples of screwed and socketed tubes made from wrought iron to the specifications of The Institution of Gas Engineers, together with the standard fittings and plug cocks which accompany such tubes. In addition, there are exhibits of larger tubes with various types of protective coverings and with lead and yarn or welded joints, for mains and distribution systems. Victaulic joints and Johnson couplings, which are so valuable where flexibility is required for expansion and contraction have to be provided for, are also on view. On their outside stands they are exhibiting "Reservoir" gas poles, both of the all-steel type and also with cast-iron bases. In these all interior pipework is eliminated, the poles themselves conveying the gas from the service pipes to the lamps. The all-steel standards have steel bases of ornamental profile made of steel tube, and the finials formed from the poles themselves. Demonstrations of the victaulic joint, showing the ease, speed, and certainty with which it can be made, are given at intervals.

*Charles Taylor (Birmingham), Ltd.*—On this stand are examples of machine vices, toolholders for capstan lathes, small tools, and bending machines for tubes, rods, and sections.

*Thomas & Bishop, Ltd.*—Here are examples of the firm's "Flexo" belt dressing, turning compound, furnace cement, and jointing paste, together with the well-known "Permac" metal-to-metal jointing material and "Kester" flux-core solders.

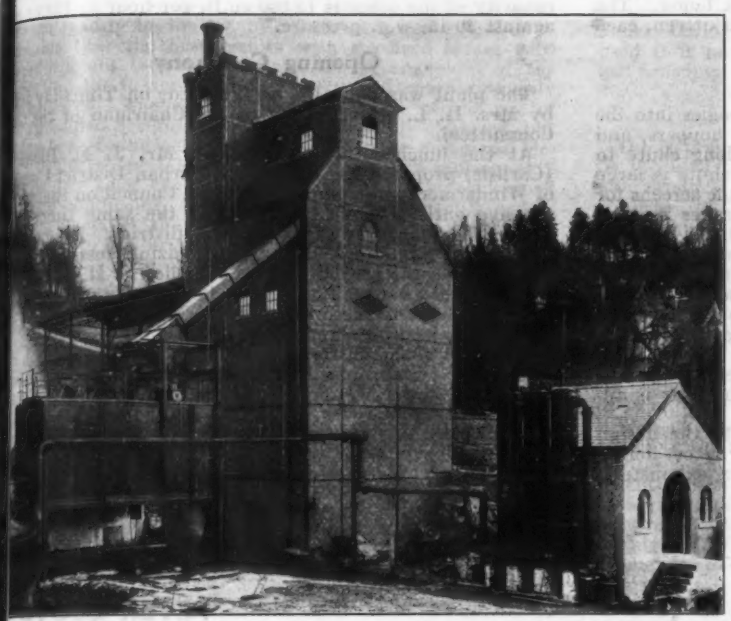
*Turners Asbestos Cement Company (Branch of Turner & Newall, Ltd.).*—Asbestos cement building materials are to be seen on this stand, in addition to pressure pipes for gas and water mains. They are also exhibiting gas flues and fittings and fire surrounds.

*Wilsons & Mathiesons, Ltd.*—This firm are showing their combination stoves, back-to-back ranges, and mottled porcelain mantel registers, also domestic boilers, portable ranges, and barless fires.

# New Vertical Retort Plant

## FOR THE

# Lake District



General View of New Retort House and other Plant at the Windermere Gas-Works.

**An installation of vertical retorts, together with ancillary plant, erected by Messrs. Drakes, Ltd., of Halifax, was formally inaugurated at the Gas-Works of the Windermere Urban District Council on May 16**

In February of 1933 Mr. T. W. Barratt, of Morecambe and Heysham, was appointed Consulting Engineer to the Windermere Gas Committee, and following a report submitted by him to the Gas Committee it was decided to discard the existing horizontal retorts and to erect a vertical retort installation and completely to reorganize the ancillary plant. After careful investigation and inspection of the various types of plant it was decided to let the contract complete with waste-heat boiler, coal store, and coke screening plant to Messrs. Drakes, Ltd., of Halifax. An enquiry by the Ministry of Health was held on Oct. 13, 1933, and sanction was received to proceed with the work on March 9, 1934.

Messrs. Drakes commenced work on their contract on March 16, under Mr. Barratt's supervision, and gas making commenced on the new vertical retorts on Oct. 30, 1934. The old horizontal plant was closed down the same day and work of demolition commenced a few days later.

The Contractors have carried out their work in a satisfactory manner and within the time specified. They have spared no pains to make the installation one of the best of its kind, and the plant is giving every satisfaction.

The remaining portion of the reconstruction work was also let to Messrs. Drakes, and was carried out under the supervision of Mr. J. N. Leckie, who had recently been appointed Resident Engineer and Manager, and comprises the removal of the existing condensers, Livesey washer, tower scrubber, and the erection of a new purifier. This work has been carried out expeditiously and in such a manner that no inconvenience has been caused in the gas making.

The installation of new exhauster house, workshop, store, and laboratory was designed and carried out by direct labour under the supervision of Mr. Leckie.

The new retort house is built on the site of the old revivifying shed on solid rock, the back of the retort house being set back into the rock of the hillside. It is a steel framed construction, the panels being built in with 4½ multi-coloured bricks set in cement mortar. The house is of pleasing design, the top of the walls being castellated. The lift tower rises above the apex of the roof and is also castellated above the flat top.

### Carbonizing Plant.

The new carbonizing plant comprises three settings of Drakes patent continuous vertical retorts, draughted on their new system of upward heating. Each setting contains one retort, each chamber being provided with an independent gas and air supply with dampers and regulators grouped in the most convenient and accessible positions which permit of the setting temperatures being easily regulated to suit the varying throughput to meet the seasonable demands for gas. Each retort has a guaranteed throughput of 4 tons of coal per diem.

The retorts are Drakes 45 Model and are constructed throughout the entire heating zone of Meltham toughened silica material, the combustion chambers and the settings linings being of the same quality material.

All the walls are insulated with Moler non-conducting bricks, and sight boxes are arranged in the front walls at frequent intervals to permit of proper inspection of the temperatures throughout the length of the retorts. The producers are arranged on the ground floor at the back of the settings and are of ample capacity and fitted with Drakes patent hanging bar grates of large area, which minimize the formation of clinker and have proved to require very little attention.

The whole of the firebrick material used in the construction of the producers and settings is of the highest quality and was supplied by Messrs. John Morton & Co., Thornton, near Bradford.

The throughput of each retort is separately controlled by a ratchet and mask device. Superheated steam is admitted into each retort through a specially fitted nickel bush device.

The governing of the gas from the retorts is accomplished by means of a 6-in. Braddock patent retort house governor, all valves being easily accessible from the charging platform. A notable feature is the charging platform, which is exceedingly spacious, efficiently lighted, and remarkably cool, permitting the men to carry out their duties in an atmosphere of comfort.

### Coal Store.

The coal store adjoins the end of the retort house, advantage being taken of the sloping ground in the formation of this, the roof of the store forming a wagon-way which permits of the coal being tipped into the store through suitable frames with hinged doors, thus eliminating any handling charges in this direction. The store has a capacity of 250 tons. Incidentally the advantages to be gained by the easy facilities of receiving and storing coal with the store in this position was the deciding factor in laying out the new plant.

The waste gases leaving the combustion chamber of the carbonizing plant pass to a standard Spencer-Bonecourt waste-heat boiler having a heating surface of 408 sq.ft. and a working pressure of 120 lb. The boiler is arranged at a level with the charging platform and can take gas direct from the producers through auxiliary flues, so that the boiler can be worked to give maximum steam requirements when the plant is working at minimum throughput.

The lift is of 25 cwt. capacity, the cage, controls, and gearing being supplied by Messrs. E. A. Foulds, Ltd., of Colne. It is one of the first of its type to be fitted with

positive locking gates. The power plant for operating the lift is a Marshall twin cylinder, totally enclosed, high-speed steam engine.

The extractor engines are in duplicate and accommodated in a suitable building inside the retort house. The engines are of Waller's exhauster type, steam driven, each of 4 H.P.

### Coke Handling Plant.

The coke from the extractors is taken in bogies into the lift and transported over the top of the coal hoppers, and from this point it falls by gravity down a long chute to the receiving hopper over the screens. This chute is large enough to store the coke to be dealt with by the screens for a period of 10 hours. The screens are of Drakes Zimmer type. The screens and jigger feed are driven by Babcock & Wilcox totally enclosed 3½-H.P. steam engine. The steel hoppers underneath the screens are divided into four compartments for breeze, nuts, domestic coke, and "overs." The hoppers are fitted with bottom chutes to load the screened coke direct into road vehicles. A platform is provided running the full length of the hoppers, and together with chutes underneath the hoppers facilitates the loading of the coke into bags. The capacity of the hoppers is approximately 30 tons.

The new exhauster house has been built to the design of Mr. Leckie on a site near the end of the new retort house. The house contains two sets of steam driven exhausters. These were manufactured by the Bryan Donkin Company Ltd., and are in duplicate complete with forced lubrication. One set is capable of dealing with 10,000 cu.ft. per hour at 105 r.p.m. against 20 in w.g. pressure, while the capacity of the other is 15,000 cu.ft. per hour at 125 r.p.m. against 20 in. w.g. pressure.

### Opening Ceremony.

The plant was officially inaugurated, on Thursday last, by Mrs. H. L. Groves (wife of the Chairman of the Gas Committee).

At the luncheon which followed, Mr. J. E. Blunden (Carlisle) proposed the toast of the Urban District Council of Windermere and complimented the Council on their progressive outlook while they had, at the same time, preserved the amenities of a beautiful district. He pointed out that it was still true that carbonizing costs played a large part in the price of gas. Councillor E. H. Pattinson, O.B.E., Vice-Chairman of the Gas Committee, proposed the toast of the Contractors, and Mr. M. T. Thompson, of Messrs. Drakes, Ltd., replied.

The toast of the visitors was proposed by Councillor J. B. Dixon, J.P., Chairman of the Windermere Urban District Council, while Mr. J. Corrigan (Penrith) responded. Councillor H. Leigh Groves, J.P. (Chairman of the Gas and Water Committee), proposed the toast of the Engineers, warmly eulogizing the work of Mr. T. W. Barratt and their own Engineer, Mr. J. N. Leckie.

# GAS HEATING IN
# The Food Industry

by PETER LLOYD

In a Paper read at a Joint Meeting of the Institution of Chemical Engineers and the Food Group of the Society of Chemical Industry in London on April 17, Mr. Peter Lloyd, B.A., A.I.C., of the Gas Light and Coke Company, gave a general survey of some typical processes in which town gas is used in the Food Industry.

The various operations may be dealt with under four main headings:

1. *Baking.*—Including grilling and toasting; bread; cakes and smalls; biscuits; pies; toasting caramel.
2. *Drying and Evaporating.*—Drying of granular, crystalline, and powdered materials; smoking and curing; evaporation of liquids.
3. *Boiling and Frying.*—Ham boiling; fish frying; potato crisps; doughnut frying.
4. *Incidental Processes.*—Sterilizing and pasteurizing; manufacture and lacquering of tinplate; soldering; water heating.

### Baking.

Baking is placed first on the list, partly because of the importance of bread baking as a food producing and a fuel consuming industry, and partly because it is a process to which the Gas Industry has recently paid some attention. The bakers in this country are beginning to appreciate the advantages of high-grade fuel, and for this reason the Gas Industry, in co-operation with the oven builders, has been making every effort to develop the use of gas for this process and to increase its utility to the baker. As a fuel, gas is generally admitted to be ideal for bread baking, its only disadvantage being its price per therm, which is always considerably greater than that of either coal or coke, and is, in normal circumstances, in excess of that of oil. The problem, which is now being faced by the Gas Industry, is the reduction of effective cost in baking operations, especially bread baking. The problem is being tackled in various ways, for instance:

(*a*) The thermal efficiency is being increased as far as possible so as to reduce to a minimum the number of therms required per sack of flour baked.
(*b*) The incidental advantages such as cleanliness and simplicity are being utilized to the full, so as to justify, as far as possible, any extra cost which may be involved.
(*c*) The price of gas to bakers is being reduced in many areas to very advantageous figures.

On the technical side the problem may be summarized as follows: The heat usefully employed in baking a 2-lb. loaf of bread is approximately 430 B.Th.U. and, as it is a low-temperature process, it would seem that a thermal efficiency of 60% approximately should be obtainable. In practice the efficiency obtained is not as a rule greater than 40%, and may often be much less, largely on account of the intermittency of operation which is usual. This corresponds to a consumption of 2 therms of gas per sack of flour baked, a figure which is now definitely obtainable on hot air and steam tube ovens under good working conditions. Unfortunately, technical considerations are not the only ones that matter, for we are faced with the problem of the old side flue ovens, which are so common all over the world, and which cannot, as a rule, be replaced without a disproportionate capital outlay. In such ovens the problem of thermal efficiency is somewhat acute, since it is not possible to modify the method of firing very radically or to introduce any method of continuous heating. On the other hand, present economic considerations are such that the side flue ovens are bound to remain in use for some considerable time. For this reason an attempt has been made to apply gas firing to side flue ovens, both for bread baking and for smalls. The burner used is a simple open pipe throwing a lazy flame along the crown of the oven and pointing approximately at the centre of the back wall. The head of the burner projects just into the oven, so that the heat is generated where it is required; on the other hand, it does not project far enough to occupy any effective oven space. The flue opening is restricted and brought as near as possible to the level of the sole, so that the oven space forms a heat trap in which gas, floating along the crown of the oven, burns by diffusion with air which is drawn in over the sole. The hot products of combustion give up their heat by radiation, fall to the sole, and are extracted by the natural draught at the flue outlet. These modifications, small though they seem, result in a considerable increase in thermal efficiency, and the running costs become comparable to those of ovens using coal or oil at 33 to 50% of the price per therm. The additional running cost is in most cases amply compensated for by the incidental advantages, and the advantage of cleanliness is most pronounced in ovens of this type in which the hot gases pass directly into the baking chamber.

In the past, steam tube ovens have principally been either oil or coke fired, and the heating surfaces and fire-box have been designed and constructed for these fuels, often with extremely small heating surfaces—*e.g.*, 25 sq.

, at 6 in. exposure, demanding a heat transfer coefficient f some 5,760 B.Th.U. per sq. ft. per hour.

With gas firing, the conditions are quite different; for stance, the application of heat along a row of tubes can e regulated as required, and the maximum rate of heat- g can readily be limited by means of a governor. It is robable that the best results with gas-fired steam tube vens will not be obtained until the arrangement of the ubes and the design of the firebox have been thoroughly econsidered. The possibilities arising out of the use of uch modified designs have not yet been fully explored, but t has been found that, even with an oven of normal de- gn, using a special burner setting, a consumption of 2 herms per sack can be obtained under reasonably good orking conditions. Similar results are being obtained in arious parts of the country on ovens which have been onverted to gas firing.

The hot air oven, like the side flue and steam tube ovens, as originally designed for solid fuel firing, but it lends itself very readily to gas firing, and gas-fired hot air ovens re now well established. The method of application of he heat has been carefully studied, and the whole of the aking chamber is used as a heating surface, together with number of brick tiles. These serve for the storage of eat which is given up to the baking chamber by radia- ion. As a result, the hot air oven tends to give slightly etter results, in terms of thermal efficiency, than any ther peel or drawplate oven.

Conveyor ovens, of any kind, being continuous in opera- ion, are often appreciably more efficient in operation than eel or drawplate ovens, especially if used at or near their ull capacity, and they are intrinsically suited to gas firing. he method of heating usually consists of ribbon burners, sing high-pressure gas or a similar system, situated above nd below the baking space, within the oven chamber, and orming elongated, directly heated ovens. The conveyor ay consist of travelling plates or other suitable arrange- ent. The output may be from 6 to 16 sacks per hour, epending on the length and width of the oven, baking mes, and temperatures, and gas consumptions as low as 50 cu.ft. per sack have been recorded on long ovens and rge outputs. Travelling plate ovens are especially suit- ble for baking Scotch loaves, and it is in Scotland that hey have been used with the greatest success; for bread aking in England they have been somewhat less generally dopted up to the present time on account of the different aking characteristics of English bread. These difficulties, owever, should not prove insuperable, and as the con- eyor oven is the only type which offers that highly valued uality, continuity of operation, it seems likely to have a reat future. Travelling plate and swinging tray conveyor vens with steam tube heating represent an alternative line f development, and may also be heated by gas. These, owever, have not quite the flexibility of the direct heated vens of the travelling plate type, and have rather lower hermal efficiency.

*Biscuit Baking.*—Biscuit baking is a process in which the ppliances and the methods of heat application have eached a high degree of development. The evolution of he gas-fired biscuit oven, which is so largely associated ith the firm of Baker Perkins, Ltd., has taken place uring the last 20 years, and now the biscuit oven fired ith solid fuel has been almost entirely displaced. The as-fired ovens as now employed usually have high-pressure as firing, but in certain cases it is preferred to use a omplete premixing system in which gas and air are com- pressed and proportioned in a single unit, and the mixture s distributed to the burners in the proportions required r combustion. Another alternative is to use air under ressure from a blower and gas at mains pressure, the air eing made to inject the gas into the burner. This makes t possible to filter the air supply to the burners and so educe the chances of blockage. The latest method is to se high-pressure gas injecting filtered air from a duct at pproximately atmospheric pressure. Burners are rranged both above and below the conveyor, those above eing within the baking chamber, so that their products irculate over the biscuits during baking.

The special advantages of gas firing in this process may e summarized as follows:

(1) Ease of temperature regulation and control: the temperature gradient along the oven can be adjusted to any desired form.
(2) Constancy of temperature throughout day.
(3) Low thermal capacity and consequently minimum time lag in changing from one setting to another.
(4) Less space occupied for a greater output, and less weight to be supported.
(5) Less wastage of product due to better control of temperature.

The fuel costs, originally estimated as 33% greater than with solid fuel, have now been found to be approximately the same, even with relatively high gas prices, thus illustrating the effect of operating efficiency in levelling up effective fuel costs.

Travelling biscuit ovens are made in a considerable range of sizes with outputs from 2 to 3 cwt. to 1 ton or more per hour. Owing to the variety of products for which they are used it is not possible to deduce any relevant figures of gas consumption per unit output.

## Drying and Evaporation.

(*a*) *Drying of Solid Materials.*—Under this heading must be included the drying of cereals, hops, and other vegetable products, also bread crumbs, cocoa powder, flour, &c.

These materials are generally either granular or powdered, and the older method of drying such substances was to put them in trays in an oven heated either externally or internally, or else to heat them in an open pan provided with an agitator. Neither method is satisfactory, for in an oven the material lies more or less closely packed in layers and the moisture has some difficulty in diffusing out of the layer after it has evaporated, while in an open pan the water vapour has still to escape largely by diffusion, and if the material is a powder a good deal of it is liable to be lost as dust. Moreover, the moisture driven off from the material is liable to be recondensed, either in the drying room or in the flues leading from the drying oven, often with unfortunate results. There has recently been a considerable advance in drying technique as a result of which increasing stress is being laid on air movement and on agitation of the material. As a result drying operations are now frequently carried out in drying rooms or ovens with forced air movement, where the material is laid out in shallow trays and is, if necessary, raked over by hand. Alternatively, continuous driers are used, in which air movement is combined with agitation of the material. In one form of continuous drier the wet material is fed in at one end of a rotating drum, in which it is brought into intimate contact with a stream of hot air, until finally it is discharged at the far end of the drum. The rotation of the drum and the movement of air through it result in very intimate contact of the material with the drying air. This allows drying to be carried out much more quickly, compactly, efficiently, and continuously.

These drying operations require large supplies of air at temperatures varying from 150° F. to 1,000° F., and gas is ideally suited for supplying the drying air. As already suggested, there is usually no objection to the use of direct firing in such a process, particularly with drying operations which involve considerable dilution of the products of combustion.

If a supply of air without products is required, it may conveniently be obtained by the use of an indirectly fired air heater with gilled tubes. In this case the thermal efficiency of the air heater is somewhat lower, approximately 70% instead of 90% for air temperatures up to 600° F., and the first cost is greater. In either type of heater dust and grit may readily be excluded by drawing the air through a viscous filter of any standard type. The thermal efficiency of drying operations varies very much according to the material being dried, and may range from 5% or less up to over 100%. The latter, apparently anomalous, figure is obtained in some cases with rotary driers, owing to a part of the water being removed in the form of a spray. In general the following factors are conducive to high thermal efficiency in drying operations:

(*a*) High initial water content.
(*b*) High final water content.
(*c*) Small particle size.
(*d*) High rate of diffusion of water vapour through particle.

It is not usually possible to estimate drying rates or efficiencies without first carrying out tests on the material. The choice between counter current flow and parallel flow must be decided by the degree of dryness finally required. When drying so that very low percentages of water are left in the material, the counter current flow is desirable, but, apart from this, parallel flow will generally be found to give higher thermal efficiency, with less risk of burning or overheating the product.

The roasting of coffee and cocoa beans are other processes which must be included in this group and for which gas is very widely employed.

(*b*) *Evaporation of Liquids.*—This important group of processes is one for which steam heating is widely employed, and direct gas firing is relatively unimportant: however, town gas is now being used in many such cases for steam raising, especially on a relatively small scale, up to about 500 lbs. per hour, under which conditions the incidental advantages often outweigh the slight extra cost.

(*To be concluded.*)

# South-Eastern Gas Corporation, Ltd.

## Reduced Prices and Better Service

The Third Ordinary General Meeting of the South-Eastern Gas Corporation, Ltd., was held on May 15 at the Registered Office, 84, Horseferry Road, London, S.W. Sir DAVID MILNE-WATSON, LL.D., D.L. (Chairman of the Corporation), presided.

Mr. H. A. PROBIN (one of the Joint Secretaries) read the notice convening the meeting and the report of the Auditors.

### Sir David Milne-Watson's Address.

The CHAIRMAN said: Gentlemen,—With your permission I will deal first with the principal items of interest in the balance-sheet. Comparing the balance-sheet before you with that at March 31, 1934, the issued capital has increased by 227,862 ordinary shares and 114,400 preference shares. All these shares were issued as part of the purchase consideration for investments acquired by the Corporation. The premiums thereon, amounting to over £90,000, have, in accordance with our practice, been placed to the credit of the capital reserve, which has been debited with the expenses in connection with the acquisition of investments, including compensation to directors, purchase commissions, &c., amounting to £34,423. The amount of the capital reserve has increased from £26,194 to £79,273.

The deposits by subsidiary companies and others have increased from £55,497 to £174,087, and there is a loan from the bank amounting to £174,700. This loan was paid off at the beginning of April, when the corporation issued 200,000 of the 4% Irredeemable preference shares, which were placed privately at 20s. 6d.

The additions to the various items on the liabilities side of the balance-sheet, which I have just mentioned, amount in the aggregate to £688,631, and the amount invested in subsidiary companies as shown on the assets side has increased by £702,672, from which is deducted expenses in connection with the purchase.

There is a statement attached to the accounts showing the investments held by the Corporation. During the year we have acquired nearly 90% of the ordinary stock of the Chertsey Gas Consumers' Company, Ltd., 86% of the Ordinary shares of the Herne Bay Gas Company, Ltd., and 89% of the ordinary stock of the Hastings and St. Leonards Gas Company. The addition of these three Companies has already helped to strengthen the position of the Corporation.

### Increase in Total Income.

If you will now turn to the revenue account you will see that the total income amounted to £120,628, which is an increase of £43,798 over the figure shown in the previous accounts. These, as you will remember, covered a period of approximately 16 months from the incorporation of the company up to March 31, 1934. There has been no alteration in the rates of dividend paid by the subsidiary companies, and the increase is mainly due to the addition to our holdings of the shares in the Hastings, Chertsey, and Herne Bay Gas Companies, and to the fact that with one small exception we received a full 12 months' dividend on all our investments in the year under review, whereas in the previous period several of the shares were held for only part of the time. This, of course, also applies to the increase shown in directors' fees receivable from the subsidiary companies, which are all payable to the Corporation.

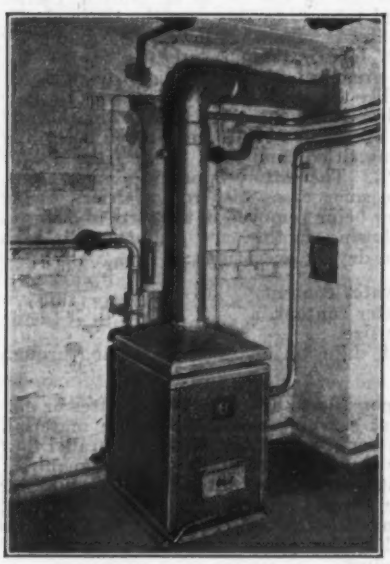
On the debit side of the revenue account the only item which calls for comment is general expenses (including cost of services rendered to subsidiary companies), amounting to £7,378. In the previous accounts the corresponding item was office expenses £653. The reason for the difference is that the first period of 16 months was a time of preliminary organization, and we had not completed our arrangements for the general administration of the affairs of the Corporation. These expenses include the cost of the central buying organization and also technical advice and assistance given to the 16 companies which we control. The cost of these services is, to a large extent, met by contributions made by the controlled companies, who, of course, derive considerable benefit, both financial and otherwise, from the services so given. The receipts from the companies are credited to the revenue account and appear on the other side under the heading "other income."

The balance carried to the net revenue account is £87,014, as against £59,918 for the previous period. To this has to be added £1,965 brought forward, making a total of £88,979. The preference dividends for the year amount to £29,487, and the

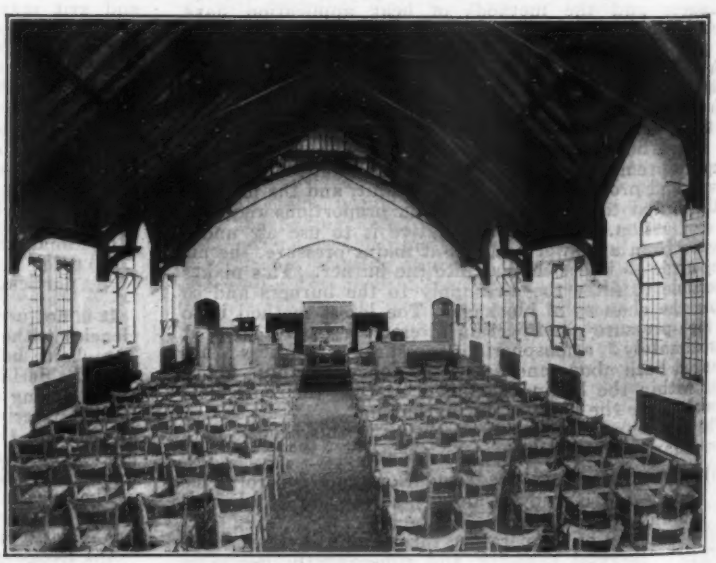

# Gas-fired Boilers for Church Warming

## A POTTERTON INSTALLATION

in a Baptist Church at Carshalton Beeches



*The Illustration above shows the No. 1 Series "REX" Boiler of three sections fitted in a basement Chair Store. The Boiler is also used for heating the Baptistry. On the right is a view of the church showing the radiators with circulations at skirting line.*



**Thomas Potterton (Heating Engineers) Ltd.**

Cavendish Works, Ravenswood Rd., Balham, London, S.W. 12

'Phone: Balham 1244-5-6 'Grams: Potterton, Bal., London

interim ordinary dividend of 3% paid in September last accounts for a further £24,704, leaving a balance of £34,787 available for distribution.

Your Directors recommend the payment of a final dividend of 3%, less tax, on the ordinary shares, making a total dividend of 6% for the year. This will absorb the sum of £24,707 and leave £10,080 to be carried forward for the current year, as against £1,965 for the previous year.

I am sure you will agree with me that the financial results are very satisfactory and show quite clearly that the affairs of the Corporation are on a sound and progressive basis.

## Wide Scope of Operations.

As I have already mentioned, we have acquired control of three additional companies during the past year. The companies in the South-Eastern group now serve an area of 875 square miles. There are over 1,000 miles of main and nearly 160,000 consumers. Over 250,000 tons of coal are carbonized per annum and the companies supply more than 20,000,000 therms of gas. You will be interested to know that in the case of eight of the companies we have already been able to make a reduction in the price of gas in some shape or form. This is a question to which your Directors are giving constant attention, and there is no doubt that further developments in this direction will be possible as time goes on.

Rationalization by means of a holding company is particularly suitable in the case of scattered country undertakings. The advantage of this form of control lies partly in the fact that raw materials, stores, &c., of all kinds can be bought more cheaply by the Corporation than by the separate undertakings acting individually, and also in the unification of management which enables the best features of industrial administration and research to be applied to the whole of the group.

During the past few years vast changes have taken place in gas appliances for cooking, heating, hot water supply, and refrigeration. We have arrived at what may be described as an "enamel age." To-day we have the modern all-enamel cooker, with automatic heat control; the variously coloured gas fires, which harmonize so well with the surroundings in a modern house; geysers and storage water heaters and gas-operated refrigerators which work without either machinery or water supply. Compare these with the old-fashioned black appliances of the past. There is as much difference as between the modern motor-car and the noisy vehicles which used to make their way rather uncertainly along our roads some 30 years ago.

## Supply of Modern Appliances.

In order to get these modern appliances into the homes of all our consumers it is necessary to have up-to-date showrooms where a representative selection can be examined, and to offer the apparatus on really attractive hire-purchase terms. To do this necessitates the outlay of a considerable amount of capital, and this is one of the directions where we can be of considerable assistance to the smaller companies which have not the resources to cope with this matter on a sufficiently large scale. In this connection we have been able to send a mobile showroom to tour round the more outlying districts which we serve. This showroom is large enough to carry a fully representative range of modern appliances, many of which can be demonstrated under working conditions, and it has visited dozens of small villages and has been inspected with great interest by hundreds of consumers who, in the ordinary way, get no opportunity of visiting the principal gas showrooms in the larger towns. The result has been very gratifying and a considerable amount of business has followed.

Many miles of main have been laid during the past year to give supplies of gas to villages in some of the more remote parts of Kent. That this service to the public is appreciated is fully shown by the number of new consumers obtained. As an example, I may mention that in one village 59 houses out of 62 took supplies as soon as the main was laid. The mobile showroom paid a visit to the village, and the people living in this country district were thus given a service comparable with that obtainable in the larger towns.

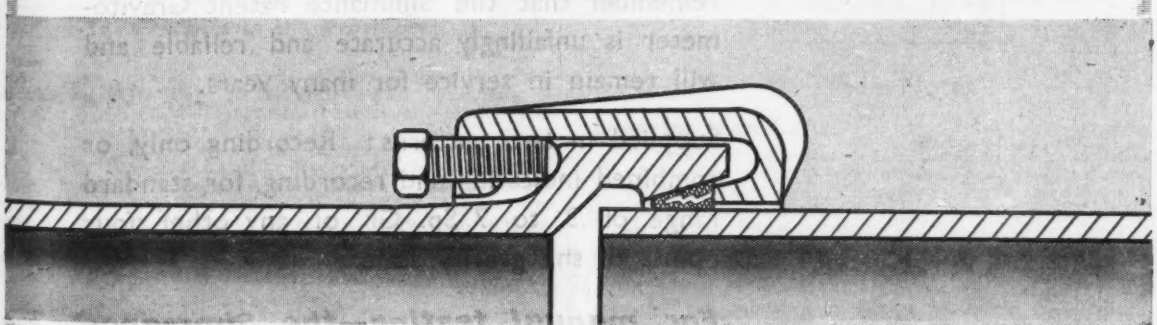
## Supplies for Industrial Purposes.

While looking after the interests of the domestic consumer, we have not lost sight of the great advantages which gas can offer to the industrial user. Several of our companies are now supplying very large quantities of gas for industrial purposes at prices which compare favourably with those of other fuels, considering the many advantages which gas offers, and at the same time give a reasonable profit to the supplying undertaking. The tendency is for more and more industries to develop in the South of England. The possibilities for gas development in this direction are considerable, and this question is receiving the special attention of your Directors and of the managers of all the companies in the group. The services of the Industrial Gas Centre of the Gas Light and Coke Company have already proved of great value in this field.

Improved street lighting, the better marketing of coke and other residuals, and, in fact, every aspect of the modern development of the Gas Industry are receiving our full attention, and we are availing ourselves of the finest technical and other resources of the Industry, so that the benefit of all modern developments may be enjoyed by the companies in the group and by all the consumers whom they serve.

The report and accounts were unanimously adopted.

The STANTON
MECHANICAL LEAD JOINT



MECHANICALLY
MADE AND HELD

For over a century engineers have felt the need for a lead pipe-joint which can be made quickly and efficiently, without special tools, by an unskilled workman. This need is now supplied by the Stanton Mechanical Lead Joint.

This Joint employs the same material as the tried and tested lead joint, yet eliminates the slow and laborious operations of lead melting, running and caulking. All the workman has to do is to slip into position two half-collars and a wedge-shaped lead joint-ring, and to tighten four cast iron set screws. The ring is then mechanically and positively compressed into a taper recess. from which it cannot be dislodged. The joint is very quickly made under the most adverse conditions—under water if necessary.

The Stanton Mechanical Lead Joint permits "drawing" of the spigot and a greater angular distortion than is possible with a caulked joint. Where heavy vibration necessitates a high degree of flexibility, the Stanton-Wilson Joint should be used.

THE STANTON IRONWORKS
COMPANY LIMITED, Near NOTTINGHAM

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**ALEXANDER WRIGHT & Co. LTD. WESTMINSTER**

# Gas Markets and Manufactures

## Stock Market Report

(For Stock and Share List, see later page)

As was anticipated, business on the Stock Exchange last week became very active; the number of transactions largely increased; and the House closed on Friday with a firm and confident undertone. A substantial turnover was recorded in British Funds, and prices responded rapidly to the demand, while some good features were noticeable in the Industrial section, particularly among aircraft, cable, and tobacco shares. Perhaps the chief event of the week was the stimulus given to the Oil Market by the "Shell" group dividend declarations, and a general increase in values took place. The Rubber Market was also busy, following a rise in the price of the commodity, while speculative interest in the Mining Market gave an impetus to the shares of base metal companies.

The Gas Market also had its share of the increased activity, and several issues made sharp improvements in value. On the local Exchange Newcastle units followed up the previous week's gain with a further rise of 9d. to 26s. 3d., and on the Bristol Exchange Newport maximum stock was moved up 8½ points to 117½. Brighton 6% rose to 175½, and another good increase was that of Colonial 8% preference by 1s. to 26s. 6d., the yield at this price being still over 6%. Other than *ex* div. reductions there were only two falls in price, and these included a drop of 1 in South Metropolitan ordinary to 132½.

Investors may be interested to note that a few parcels of the Commercial Gas Company's new 3% debenture stock are still available at round about 88, free of expense, which price also includes a full half-year's interest payable on June 20 next.

The accounts of the Imperial Continental Gas Association for the year to March 31 show that revenue from dividends, &c., has continued almost unchanged at £662,019, and on account of a reduction in general charges the net profit has increased from £514,270 in 1933-34 to £523,093. As mentioned in this Report last week, the dividend for the year is maintained at 12%, and after allowing for this the carry-forward is slightly higher at £488,075.

The Croydon Company is to be congratulated on its large local popularity, for its recent issue of £75,000 5% maximum stock to consumers and employees met with a remarkable response. Applications were received for £499,545, and in pursuance of its policy the Directors have given special consideration to small applicants.

## Current Sales of Gas Products

### The London Market for Tar Products.

LONDON, *May* 20.

There are no changes to report in the prices of Tar Products, which remain at about the following levels:

Pitch, about 40s. per ton f.o.b.

Creosote, 5½d.

Refined tar, 4d. per gallon in bulk at makers' works.

Pure toluole, 2s. 1d. to 2s. 3d.; pure benzole, 1s. 7d. to 1s. 8d.; 95/160 solvent naphtha, 1s. 5d.; and 90/160 pyridine, about 5s. 9d.—all per gallon naked at makers' works.

### Tar Products in the Provinces.

*May* 20.

The average prices of gas-works products during the week were: Gas-works tar, 20s. to 25s. Pitch—East Coast, 38s. to 40s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 38s. to 40s.* Toluole, naked, North, 1s. 8d. to 1s. 9d. Coal-tar crude naphtha, in bulk, North, 6½d. to 6¾d. Solvent naphtha, naked, North, 1s. 4¼d. to 1s. 4¾d. Heavy naphtha, North, 9¾d. to 10¾d. Creosote, *ex* works, in bulk, North, liquid and salty, 4¾d. to 4¾d.; low gravity, 4⅝d. to 4¾d.; Scotland, 4⅝d. to 4¾d. Heavy oils, in bulk, North, 4d. to 4¼d. Carbolic acid, 60's, 2s. to 2s. 1d. Naphthalene, £10 to £11. Salts, 55s. to 75s., bags included. Anthracene, "A" quality, 2½d. to 3d. per minimum 40%, purely nominal; "B" quality, unsalable.

### Tar Products in Scotland.

GLASGOW, *May* 18.

There is a small but steady demand for most products and prices are well maintained.

Crude gas-works tar.—The actual value is 28s. to 30s. per ton *ex* works in bulk.

Pitch.—Export value is purely nominal at round 40s. per ton f.o.b. Glasgow. For home trade about 40s. per ton *ex* works in bulk continues to be quoted.

Refined tar is receiving more attention and large quantities are changing hands at round 3d. per gallon naked at makers' works.

Creosote oil is still difficult to secure in any quantity and values are steady. B.E.S.A. Specification, 5d. to 5¼d. per gallon; low gravity, 5d. to 5½d. per gallon; and neutral oil, 5d. to 5¼d. per gallon; all f.o.r. in bulk.

Cresylic acid.—There is little business being conducted and prices are unstable. The following are average quotations:—Pale, 97/99%, 1s. 1½d. to 1s. 2½d. per gallon; dark, 97/99%, 1s. to 1s. 0½d. per gallon; and pale, 99/100%, 1s. 2½d. to 1s. 3½d. per gallon; all *ex* works.

Crude naphtha.—Supplies are short and value is steady at 4½d. to 4¾d. per gallon; according to quality and district.

Solvent naphtha.—90/160 grade is 1s. 3d. to 1s. 3½d. per gallon, and 90/190 heavy naphtha is not too plentiful at 10d. to 11d. per gallon.

Motor benzole shows an increase during the week to 1s. 2½d. to 1s. 3½d. per gallon in bulk at makers' works.

Pyridines.—90/160 grade is 5s. 6d. to 6s. per gallon, and 90/140 grade 6s. to 6s. 6d. per gallon.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

### Benzole Prices.

These are considered to be the market prices for benzole at the present time:

| | s. | d. | | s. | d. | |
|---|---|---|---|---|---|---|
| Crude benzole | 0 | 9½ | to | 0 | 10 | per gallon at works |
| Motor ,, | 1 | 3 | ,, | 1 | 3½ | ,, ,, ,, |
| 90% ,, | 1 | 4 | ,, | 1 | 4½ | ,, ,, ,, |
| Pure ,, | 1 | 7½ | ,, | 1 | 8 | ,, ,, ,, |

## Contracts Advertised To-Day

**Coal.**

Hoylake Gas Department. [p. 460.]
Malvern Urban District Council [p. 459.]
Neath Gas Works. [p. 460.]
Newbury Gas Department. [p. 460.]
Sutton-in-Ashfield Urban District Council. [p. 459.]

**Gasholder.**

Burnley Gas Department. [p. 460.]

**Lamp Columns.**

Stockport Gas Department. [p. 459.]

**Mantles.**

Sutton-in-Ashfield Urban District Council. [p. 459.]

**Oil, Lubricating.**

Sutton-in-Ashfield Urban District Council. [p. 459.]

**Pipes.**

Sutton-in-Ashfield Urban District Council. [p. 459.]

**Retort Installation (Vertical).**

Newry Urban District Council. [p. 460.]

## Trade Notes

### Lowering Heat Costs.

A book of practical economies based on the experiences of over 5,000 industrial heat users has been published by Messrs. J. H. Sankey & Son, Ltd., "Pyruma" Works and Offices, The Hill, Ilford, Essex, dealing with the advantages of their "Pyruma" Plastic Fire Cement.

### Steam Installations for Gas-Works.

A folder of considerable interest to Gas Engineers has recently been published by Messrs. W. Sisson & Co., Ltd., of Gloucester. This briefly describes some of the steam plants which the firm have supplied and these installations include power plant; engine-driven fans, boosters, and exhausters; and engines for driving extractor gear, hoists and lifts and steam pushers. Messrs. Sisson have supplied over three hundred plants in this country and many of these are repeat orders.

## Gas Undertakings' Results

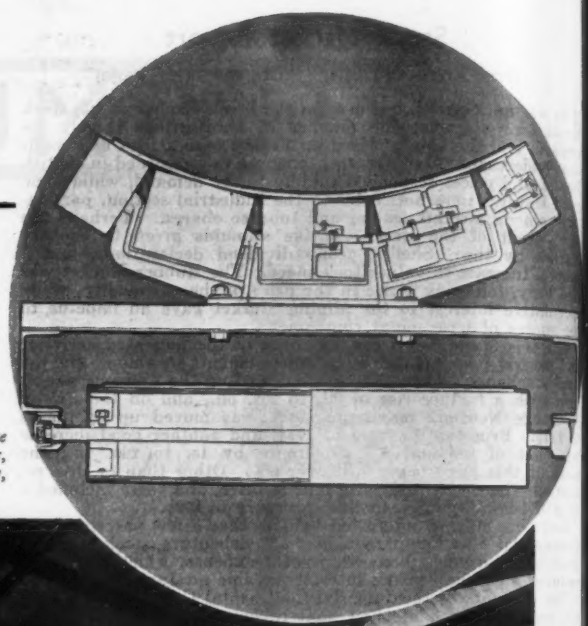
### Keady (Co. Armagh).

For the year ended March 31, 1935, the Keady (Co. Armagh) Gas Department made a gross profit of £331 and a net profit of £68.

ONE OF THE WELL-KNOWN FEATURES OF

# WEST'S MECHANICAL HANDLING SYSTEMS

**THE FIRST COAL-HANDLING BELTS ...**
successfully installed as gas-works equipment 50 years ago were of "West" design and manufacture. The modern equivalent, whether for light or heavy duty, represents the highest attainable standard in this method of coal or coke-handling.



*"West" belt conveyor at the Nine Elms works of the Gas, Light and Coke Company, London.*

*Belt Conveyors, Elevators, Skip-hoists*

•

*The West Lip-bucket Conveyor with Automatic forced Lubrication*

•

*The West Coal Breaker*

•

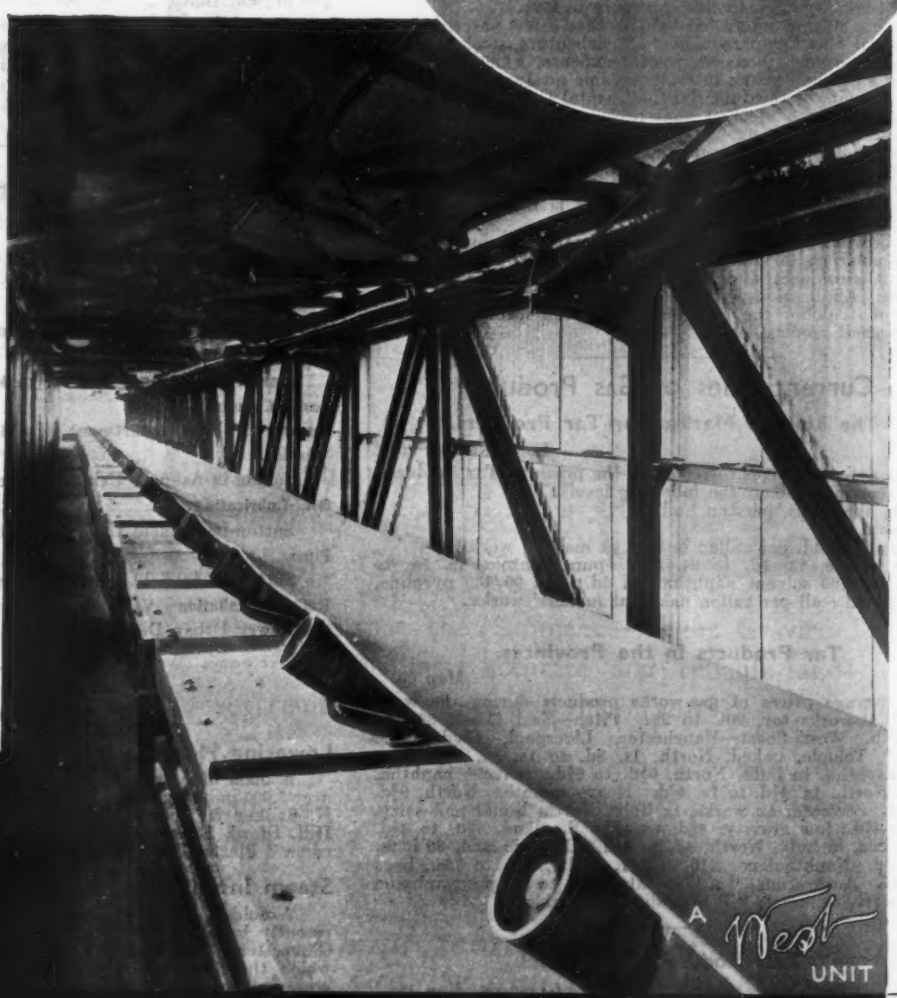
*The West-Calvert Coke Cutter*

•

*The West Coke Grader*

•

*Wagon Tipplers, Telpherage and Crane Equipment, etc.*




## THE *West* BELT CONVEYOR

WEST'S GAS IMPROVEMENT COMPANY, LTD.

MANCHESTER : Albion Ironworks, Miles Platting

LONDON : Regent House, Kingsway, W.C.2

# STOCK AND SHARE LIST

## Official Quotations on the London and Provincial Stock Exchanges

| Issue. £ | Share | When ex-Dividend. | Dividends. Prev. Hf. Yr. % p.a. | Dividends. Last Hf. Yr. % p.a. | NAME. | Quotations, May 17. | Rise or Fall on Week. | Transactions, Lowest and Highest Prices During the Week. |
|---|---|---|---|---|---|---|---|---|
| 1,551,868 | Stk. | Mar. 11 | 7 | 7 | Alliance & Dublin Ord. ... | 128—138 | ... | 138½ |
| 374,000 | ,, | Dec. 17 | 4 | 4 | Do. 4 p.c. Deb. ... | 90—100 | ... | ... |
| 557,655 | ,, | Feb. 18 | 7 | 7 | Barnet Ord. 7 p.c. ... | 165—170 | ... | ... |
| 380,000 | 1 | Apl. 8 | 1/4⅛ | 1/9⅛ | Bombay, Ltd. ... ... ... | 27/6—29/6 | ... | 27/6 |
| 178,480 | Stk. | Feb. 18 | 9½ | 9½ | Bournemouth sliding scale ... | 220—230 | ... | 225—227 |
| 550,050 | ,, | ,, | 7 | 7 | Do. 7 p.c. max. ... | 167—172 | ... | 170—172 |
| 439,160 | ,, | ,, | 6 | 6 | Do. 6 p.c. Pref. ... | 147—152 | ... | 148 |
| 50,000 | ,, | Dec. 17 | 3 | 3 | Do. 3 p.c. Deb. ... | 86—91 | ... | ... |
| 262,025 | ,, | ,, | 4 | 4 | Do. 4 p.c. Deb. ... | 105—110 | +1 | 108½—109½ |
| 335,000 | ,, | ,, | 5 | 5 | Do. 5 p.c. Deb. ... | 125—130 | ... | ... |
| 357,900 | ,, | Feb. 18 | 7½ | 7½ | Brighton, &c., 6 p.c. Con. ... | 173—178 | +3 | 175½—176½ |
| 649,955 | ,, | ,, | 6¾ | 6¾ | Do. 5 p.c. Con. ... | 153—158 | ... | ... |
| 205,500 | ,, | ,, | 6 | 6 | Do. 6 p.c. B. Pref. | 145—150 | ... | ... |
| 1,487,500 | ,, | Feb. 4 | 5 | 5 | Bristol, 5 p.c. max. ... ... | 121—123*a* | ... | ... |
| 120,420 | ,, | Dec. 17 | 4 | 4 | Do. 1st 4 p.c. Deb. ... | 102—104*a* | ... | ... |
| 217,870 | ,, | ,, | 4 | 4 | Do. 2nd 4 p.c. Deb. ... | 102—104*a* | ... | ... |
| 328,790 | ,, | ,, | 5 | 5 | Do. 5 p.c. Deb. ... ... | 122—124*a* | ... | ... |
| 855,000 | ,, | Mar. 11 | 7 | 8 | British Ord. ... ... ... | 152—162 | ... | 156—156½ |
| 100,000 | ,, | Dec. 17 | 7 | 7 | Do. 7 p.c. Pref. ... ... | 150—160 | ... | ... |
| 350,000 | ,, | ,, | 5 | 5½ | Do. 5½ p.c. "B" Cum. Pref. | 114—119 | ... | ... |
| 120,000 | ,, | ,, | 4 | 4 | Do. 4 p.c. Red. Deb. ... | 97—102 | ... | ... |
| 450,000 | ,, | ,, | 5 | 5 | Do. 5 p.c. Red. Deb. ... | 111—116 | ... | ... |
| 100,000 | 10 | 22 May '33 | 6 | 4 | Cape Town, Ltd. ... ... | 1—3 | ... | ... |
| 100,000 | 10 | 6 Nov. '33 | 4½ | 4½ | Do. 4½ p.c. Pref. ... | 1—3 | ... | ... |
| 150,000 | Stk. | Dec. 17 | 4½ | 4½ | Do. 4½ p.c. Deb. ... | 85—90 | ... | 84—88 |
| 626,860 | ,, | Jan. 21 | 6 | 6 | Cardiff Con. Ord. ... | 130—135 | ... | ... |
| 237,860 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Red. Deb. | 105—110 | ... | ... |
| 157,150 | ,, | Feb. 4 | 5 | 6½ | Chester 5 p.c. Ord. ... ... | 111—116*b* | ... | ... |
| 98,936 | 1 | Mar. 25 | 2/- | 2/- | Colombo, Ltd., Ord. ... ... | 1⅞—1¾ | ... | ... |
| 24,500 | 1 | ,, | 1/4½ | 1/4½ | Do. 7 p.c. Pref. ... | 20/6—22/6 | ... | ... |
| 609,204 | 1 | Mar. 25 | -/11·48 | -/11·48 | Colonial Gas Assn. Ltd. Ord. | 20/—22/- | ... | ... |
| 296,053 | 1 | ,, | 1/3·30 | 1/3·30 | Do. 8 p.c. Pref. | 25/6—27/6 | +1/- | 27/- —27/3 |
| 1,775,005 | Stk | Feb. 4 | 5 | 6 | Commercial Ord. ... ... | 108—113 | ... | 108—109½ |
| 475,000 | ,, | Dec. 3 | 3 | 3 | Do. 3 p.c. Deb. ... | 85—90 | ... | ... |
| 286,344 | ,, | Feb. 18 | 5 | 5 | Do. 5 p.c. Deb. ... | 123—128 | ... | 124 |
| 807,560 | ,, | Feb. 18 | 7 | 7 | Croydon sliding scale... ... | 155—160 | ... | 157—159 |
| 569,590 | ,, | ,, | 5 | 5 | Do. max. div. ... ... | 112—117 | ... | 114—115 |
| 620,385 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Deb. ... | 125—130 | ... | ... |
| 542,270 | ,, | Feb. 18 | 7 | 10 | Derby Con. ... ... ... | 185—195*c* | ... | ... |
| 55,000 | ,, | Dec. 17 | 4 | 4 | Do. 4 p.c. Deb. ... ... | 100—105*c* | ... | ... |
| 239,000 | ,, | Feb. 4 | 5 | 5 | East Hull Ord. 5 p.c. ... ... | 108—113 | −3 | 108 |
| 181,625 | ,, | Feb. 4 | 6 | 6 | East Surrey Ord 5 p.c. ... | 131—136 | ... | ... |
| 175,609 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Deb. ... | 120—125 | ... | ... |
| 1,002,180 | ,, | Mar. 11 | † | †7 | European, Ltd. ... ... | 112—115 | +2 | 112—115 |
| 19,313,481 | ,, | Feb. 4 | 5½ | 5½ | Gas Light & Coke 4 p.c. Ord. | 27/3—28/3*f* | ... | 27/5†—28/- |
| 2,600,000 | ,, | ,, | 3½ | 3½ | Do. 3½ p.c. max. ... ... | 85—90 | ... | 86†—88 |
| 4,477,106 | ,, | ,, | 4 | 4 | Do. 4 p.c. Con. Pref. ... | 104—109 | ... | 106†—108 |
| 6,102,497 | ,, | Dec. 3 | 3 | 3 | Do. 3 p.c. Con. Deb. ... | 88—93 | ... | 90†—91½ |
| 3,642,770 | ,, | ,, | 5 | 5 | Do. 5 p.c. Red. Deb. ... | 115—120 | ... | ... |
| 3,500,000 | ,, | ,, | 4½ | 4½ | Do. 4½ p.c. Red. Deb. ... | 111—116 | ... | 114—115 |
| 270,466 | ,, | Feb. 18 | 6 | 6 | Harrogate New Cons. ... | 135—140 | ... | ... |
| 140,000 | 1 | Mar. 25 | 1/7½ | 1/7½ | Hongkong & China, Ltd. ... | 1¼—1½ | ... | ... |
| 213,200 | Stk. | Feb. 18 | 6 | 6 | Hornsey Con. 3½ p.c.... ... | 128—138 | ... | ... |
| 5,600,000 | ,, | May 13 | 10 | 14 | Imperial Continental Cap. ... | 208—213* | −7 | 209½—217½ |
| 223,130 | ,, | Jan. 21 | 3½ | 3½ | Do. 3½ p.c. Red. Debs. | 91—96 | ... | ... |
| 285,242 | ,, | Feb. 18 | 8½ | 8½ | Lea Bridge 5 p.c. Ord. ... | 172—182 | ... | ... |
| 2,167,410 | ,, | Feb. 18 | 6 | 6 | Liverpool 5 p.c. Ord.... ... | 136—140*b* | ... | ... |
| 245,500 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Red. Pref. ... | 105—110*b* | ... | ... |
| 306,083 | ,, | Jan. 16 | 4 | 4 | Do. 4 p.c. Deb. ... ... | 104—107*b* | ... | ... |
| 165,736 | ,, | Feb. 18 | 8 | 10 | Maidstone 5 p.c. Cap. ... | 185—195 | ... | ... |
| 63,480 | ,, | Dec. 17 | 3 | 3 | Do. 3 p.c. Deb. ... | 83—88 | ... | ... |
| 75,000 | ,, | Dec. 3 | †10 | †10 | Malta & Mediterranean ... | 205—215 | ... | ... |
| 392,000 | — | Apl. 1 | 5½ | 5½ | Metropolitan (of Melbourne) 5½ p.c. Red. Deb. ... ... | 100—105 | ... | ... |
| 231,978 | Stk. | Feb. 4 | 5 | 5 | M. S. Utility "C" Cons. ... | 110—115 | ... | ... |
| 818,657 | ,, | ,, | 4 | 4 | Do. 4 p.c. Cons. Pref. | 102—107 | ... | 105½ |
| 360,075 | ,, | Dec. 17 | 4 | 4 | Do. 4 p.c. Deb. ... | 103—108 | ... | ... |
| 148,955 | ,, | ,, | 5 | †5 | Do. 5 p.c. Deb. ... | 125—130 | ... | ... |
| 125,000 | — | Jan. 2 | 11/8 | 3½ | Do. 3½ p.c. Rd. Rg. Bds. | 98—101 | ... | ... |
| 675,000 | ,, | May 28 | †6 | ††3 | Montevideo, Ltd. ... ... | 50—60 | ... | 51—52 |
| 2,061,315 | ,, | Feb. 18 | 5 | 5½ | Newcastle & Gateshead Con. | 25/9—26/9*df* | +-/9 | ... |
| 682,856 | ,, | ,, | 4 | 4 | Do. 4 p.c. Pref. ... | 106—107*d* | ... | ... |
| 776,706 | ,, | Dec. 17 | 3½ | 3½ | Do. 3½ p.c. Deb. ... | 101½—102½*d* | ... | ... |
| 277,285 | ,, | Oct. 8 | 5 | 5 | Do. 5 p.c. Deb. '43 ... | 105—107*d* | ... | ... |
| 274,000 | ,, | Feb. 4 | 5 | 5 | Newport (Mon.) 5 p.c. max.... | 115—120*a* | +6½ | ... |
| 225,000 | ,, | Feb. 18 | 7½ | 7½ | North Middlesex 6 p.c. Con. | 170—175 | ... | ... |
| 396,160 | ,, | Feb. 4 | 5 | 5 | Northampton 5 p.c. max. ... | 105—110 | ... | ... |
| 300,000 | ,, | Apl. 29 | †9 | †7 | Oriental, Ltd. ... ... ... | 167—172 | ... | ... |
| 416,617 | ,, | Dec. 17 | 8 | 8 | Plym'th & Stonehouse 5 p.c. | 165—170 | ... | ... |
| 504,416 | ,, | Feb. 4 | 8 | 8½ | Portsm'th Con. Stk. 4 p.c. Std. | 173—178 | ... | ... |
| 241,446 | ,, | ,, | 5 | 5 | Do. 5 p.c. max. ... | 110—115 | ... | ... |
| 114,000 | ,, | Jan. 21 | 5 | 5 | Preston 5 p.c. Pref. ... ... | 108—113 | ... | ... |
| 1,736,968 | Stk. | Feb. 18 | 6 | 6 | Sheffield Cons. ... ... | 141—143*e* | ... | ... |
| 95,000 | ,, | Jan. 7 | 4 | 4 | Do. 4 p.c. Deb. ... ... | 103—106*e* | ... | ... |
| 133,201 | ,, | Feb. 18 | 8½ | 5 | Shrewsbury 5 p.c. Ord. ... | 142—147 | ... | ... |
| 90,000 | 10 | May 28 | †4 | †3 | South African ... ... ... | 3—4 | ... | ... |
| 1,061,779 | 1 | May 13 | 1/2‡ | 1/2‡ | South East'n Gas Cn. Ld. Ord. | 26/6—28/6* | −/6 | 28/1½ |
| 845,016 | 1 | Mar. 11 | -/10½ | -/10½ | Do. 4½ p.c. Red. Cum. Pref. | 21/9—22/9 | ... | 22/6—22/10½ |
| 450,000 | Stk. | Feb. 4 | 74·4 | 4 | Do. 4 p.c. Red. Deb. ... | 100—103 | ... | ... |
| 6,709,895 | ,, | Feb. 4 | 5 | 6½ | South Met. Ord. ... ... | 130—135 | −1 | 132—133½ |
| 1,135,812 | ,, | ,, | 6 | 6 | Do. 6 p.c. Irred. Pf. ... | 147—152 | ... | 148—150 |
| 850,000 | ,, | ,, | 4 | 4 | Do. 4 p.c. Irred. Pf. ... | 104—109 | ... | 106—107 |
| 1,895,445 | ,, | Dec. 17 | 3 | 3 | Do. 3 p.c. Deb. ... | 87—92 | ... | 88½—89 |
| 1,000,000 | ,, | Jan. 7 | 5 | 5 | Do. 5 p.c. Red. Deb.... | 113—118 | ... | 116 |
| 209,820 | ,, | Feb. 18 | 8½ | 8½ | South Shields Con. ... ... | 174—176*d* | ... | ... |
| 1,543,795 | ,, | Feb. 18 | 6 | 6 | South Suburban Ord 5 p.c. ... | 130—135 | ... | 131—131½ |
| 512,825 | ,, | ,, | 5 | 5 | Do. 5 p.c. Pref. ... | 121—126 | ... | 124½ |
| 500,000 | ,, | ,, | 4 | 4 | Do. 4 p.c. Pref. ... | 102—107 | ... | ... |
| 888,587 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Deb. ... | 124—129 | ... | 127½ |
| 250,000 | ,, | ,, | 4 | 4 | Do. 4 p.c. Deb. ... | 103—108 | ... | ... |
| 647,740 | ,, | Feb. 4 | 5 | 5 | Southampt'n Ord. 5 p.c. max.. | 114—119 | ... | ... |
| 121,275 | ,, | Dec. 17 | 4 | 4 | Do. 4 p.c. Deb. | 102—107 | ... | ... |
| 350,000 | ,, | Feb. 4 | 5½ | 5½ | Swansea 5½ p.c. Red. Pref. ... | 115—120 | ... | 117—118 |
| 200,000 | ,, | Dec. 17 | 6½ | 6½ | Do. 6½ p.c. Red. Deb. ... | 100—105 | ... | ... |
| 1,076,490 | ,, | Feb. 18 | 6½ | 6½ | Tottenham and District Ord. | 148—153 | ... | 148—150½ |
| 409,835 | ,, | ,, | 5½ | 5½ | Do. 5½ p.c. Pref. ... | 131—136 | ... | ... |
| 62,235 | ,, | ,, | 5 | 5 | Do. 5 p.c. Pref. ... | 120—125 | ... | ... |
| 199,005 | ,, | Dec. 3 | 4 | 4 | Do. 4 p.c. Deb. ... | 103—108 | ... | 107 |
| 369,774 | ,, | Feb. 4 | 7 | 7 | Uxbridge, &c., 5 p.c. ... ... | 150—155 | ... | ... |
| 108,330 | ,, | ,, | 5 | 5 | Do. 5 p.c. Pref. ... | 118—123 | ... | 122 |
| 1,326,700 | ,, | Feb. | 7 | 7 | Wandsworth Consolidated ... | 155—160 | ... | 155—159½ |
| 1,371,373 | ,, | ,, | 5 | 5 | Do. 5 p.c. Pref. ... | 121—126 | ... | ... |
| 1,317,954 | ,, | Dec. 17 | 5 | 5 | Do. 5 p.c. Deb. ... | 126—131 | ... | ... |
| 208,300 | ,, | ,, | 26/8 | 4 | Do. 4 p.c. Deb. ... | 104—109 | ... | ... |
| 158,400 | ,, | Feb. 18 | 5 | 6g | Winchester W. & G. 5 p.c. Con. | 116—121 | ... | ... |

Quotations at :—*a*.—Bristol. *b*.—Liverpool. *c*.—Nottingham. *d*.—Newcastle. *e*.—Sheffield. *f*.—The quotation is per £1 of Stock. *g*.—Paid £3, including 10s. on account of back dividends. * Ex. div. † Paid free of income-tax. ‡ For year.

## COMPANY NOTICES.

### THE MALTA AND MEDITERRANEAN GAS COMPANY, LIMITED.

TO THE PROPRIETORS.

NOTICE is Hereby Given that an ORDINARY GENERAL MEETING of the Proprietors of the Company will be held at the Offices, 5, Great Winchester Street, Old Broad Street, London, E.C. 2, on Tuesday, 4th June, 1935, at Twelve o'clock noon, to receive the Report of the Directors and the Accounts for the Year ended 31st March, 1935; to declare Dividends; to elect Auditors and to fix their remuneration; and to transact the General Business of the Company.

One of the Directors, BRIG.-GENERAL GOLAND VANHOLT CLARKE, C.M.G., D.S.O., retires from office, and offers himself for re-election.

The Auditors, Mr. WILLIAM CASH, F.C.A., and Mr. HYDE CLARKE BURTON, F.C.A., retire, and offer themselves for re-election.

The TRANSFER BOOKS WILL BE CLOSED from the 22nd day of May until the day of the Meeting, both days inclusive.

By order of the Board,
G. MURRAY BURTON,
Secretary.

5, Great Winchester Street,
Old Broad Street, E.C. 2,
May 7, 1935.

## PATENTS.

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